THE FARMERS' REGISTER.

VOL. IX. NOVEMBER 30, 1841. No. 11.

EDMUND RUFFIN, EDITOR AND PROPRIETOR.

OF PRUNING.

From Lindley's Horticulture.

The quantity of timber that a tree forms, the amount and quality of its secretions, the brilliancy of its colors, the size of its flowers, and, in short, its whole beauty depend upon the action of its branches and leaves, and their healthiness. The object of the pruner is to diminish the number of leaves and branches; whence it may be at once understood how delicate are the operations he has to practise, and how thorough a knowledge he ought to possess of all the laws which regulate the action of the organs of vegetation. If well directed, pruning is one of the most useful, and, if ill-directed, it is among the most mischievous, operations that can take place upon a plant.

When a portion of a healthy plant is cut off, all that sap which would have been expended in supporting the part removed is directed into the parts which remain, and more especially into those in the immediate vicinity of it. Thus, if the leading bud of a growing branch is stopped, the lateral buds, which would otherwise have been dormant, are made to sprout forth; and, if a growing branch is shortened, then the very lowest buds, which seldom push, are brought into action: hence the necessity, in pruning, of cutting a useless branch clean out; otherwise the removal of one branch is only the cause of the production of a great many others. This effect of stopping does not always take place immediately; sometimes its first effect is to cause an accumulation of sap in a branch, which directs itself to the remaining buds, and organizes them against a future year. In ordinary cases, it is thus that spurs or short bearing-branches are obtained in great abundance. The growers of the filbert, in Kent, procure in this way greater quantities of bearing wood than nature unassisted would produce; for, as the filbert is always borne by the wood of a previous year, it is desirable that every bush should have as much of that wood as can be obtained, for which every thing else may be sacrificed; and such wood is readily secured by observing a continual system of shortening a young branch by two thirds, the effect of which is to call all its lower buds into growth the succeeding year; and thus each shoot of bearing wood is compelled to produce many others. The peach, by a somewhat similar system, has been made to bear fruit in unfavorable climates (*Hort. Trans.*, ii. 366); and every gardener knows how universally it is applied to the pear, apple, plum, and similar trees.*

Even the fig-tree has thus been rendered much more fruitful than by any other method. Whenever," says Mr. Knight, "a branch of this tree appears to be extending with too much luxuriance, its point, at the tenth or twelfth leaf, is pressed between the finger and thumb, without letting the nails come in contact with the bark, till the soft succulent substance is felt to yield to the pressure. Such branch, in consequence, ceases subsequently to elongate; and the sap is repulsed, to be expended where it is more wanted. A fruit ripens at the base of each leaf, and during the period in which the fruit is ripening, one or more of the lateral buds shoots, and is subsequently subjected to the same treatment, with the same result. When I have suffered such shoots to extend freely to their natural length, I have found that a small part of them only became productive, either in the same or the ensuing season, though I have seen that their buds obviously contained blossoms. I made several experiments to obtain fruit in the following spring from other parts of such branches, which were not successful: but I ultimately found that bending these branches, as far as could be done without danger of breaking them, rendered them extremely fruitful; and, in the present spring, thirteen figs ripened perfectly upon a branch of this kind within the space of ten inches. In training, the ends of all the shoots have been made, as far as practicable, to point downwards." (*Hort. Trans.*, iv. 201.)

The effect produced upon one part by the abstraction of some other part, thus shown in the developement of buds which would otherwise be dormant, is seen in many other ways. If all the fruit of a plant is abstracted one year when just forming, the fruit will be finer and more abundant the succeeding year, as happens when late frosts destroy our crops.* If of many flowers one only is left, that one, fed by the sap intended for the others, becomes so much finer. If the late figs, which never ripen, are abstracted, the early figs the next year are more numerous and larger. If of two unequal branches, the stronger is shorten-

* [Nothing is more general, of late years, than complaints of the short period of productiveness in the peach tree, throughout the middle states. Although this is often owing to the worm, which girdles the tree at the root, yet the almost total neglect of *pruning* is a frequent cause of sterility and decay. When left to itself the interior of the head of the tree becomes filled with small dead branches, and the trunk and larger limbs bark-bound and moss-covered; the whole tree is enfeebled; leaves are only produced at the extremity of the long branches, and the fruit borne, if any, is comparatively worthless. By pursuing the practice recommended in the text, the trees may be preserved for a long time in a high state of vigor and productiveness. A. J. D.]

* [The apple trees, in this country, very commonly bear enormous crops every other year; and the orchardist finds himself nearly destitute of fruit one season, while his trees on the following year are nearly breaking down beneath their load. The excessive fecundity of one season so exhausts the tree that it requires another whole season for recovery. A certain and uniform crop may be obtained *every year*, by thinning out one-half or two-thirds of the apples when they have attained about one-fourth of their usual size. The remainder will grow to greater perfection than if all were left; while the tree, having produced only a moderate crop, will bear again the succeeding year. When this practice has been pursued for some years with trees that have just fairly commenced bearing, it often happens that they will afterwards produce moderate annual crops if left to themselves. A. J. D.]

ed and stopped in its growth, the other becomes stronger; and this is one of the most useful facts connected with pruning, because it enables a skilful cultivator to equalize the rate of growth of all parts of a tree; and, as has been already stated, this is of the greatest consequence in the operation of budding. In fact, the utility of the practice, so common in the management of fruit trees when very young, turns entirely upon this. A seedling tree has a hundred buds to support, and consequently the stem grows slowly, and the plant becomes bushy-headed: but, being cut down so as to leave only two or three buds, they spring upwards with great vigor, and, being reduced eventually to one, as happens practically, that one receives all the sap, which would otherwise be diverted into a hundred buds, and thrives accordingly, the bushy head being no longer found, but a clean straight stem instead. In the oak and the Spanish chestnut this is particularly conspicuous.

Nothing is more strictly to be guarded against than the disposition to *bleed*, which occurs in some plants when pruned, and to such an extent as to threaten them with death. In the vine, in milky plants, and in most climbers or twiners, this is particularly conspicuous; and it is not unfrequently observed in fruit trees with gummy or mucilaginous secretions, such as the plum, the peach, and other stone fruits. This property usually arises from the larger size of the vessels through which sap is propelled at the periods of early growths, which vessels are unable, when cut through, to collapse sufficiently to close their own apertures, when they necessarily pour forth their fluid contents as long as the roots continue to absorb them from the soil. If this is allowed to continue, the system becomes so exhausted as to be unable to recover from the shock, and the plant will either become very unhealthy, or will die.* The only mode of avoiding it is to take care never to wound such trees at the time when their sap first begins to flow; after a time, the demand upon the system by the leaves becomes so great that there is no surplus, and therefore bleeding does not take place when a wound is inflicted.†

All these things show how extremely necessary it is to perform the operations of pruning with care and discretion. But in addition to the general facts already mentioned, there are others of a more special kind that require attention. The first thing to be thought of is the peculiar nature of the plant under operation, and the manner in which its special habits may render a special mode of pruning necessary. For example, the fruit of the fig and walnut is borne by the wood of the same season; that of the vine and filbert by that of the second season; and pears, apples, &c., by wood of some years' growth; it is clear that plants of these three kinds will each require a distinct plan of pruning for fruit.

The pruner has frequently no other object in view than that of thinning the branches so as to allow the free access of light and air to the fruit; and if this purpose is wisely followed, by merely removing superfluous foliage, the end attained is highly useful; it is clear, however, that in order to arrive at this end, without committing injury to the tree which is operated on, it is indispensable that its exact mode of bearing fruit should be in the first instance clearly ascertained.

The period of ripening fruit is sometimes changed by skilful pruning, as in the case of the raspberry, which may be made to bear a second crop of fruit in the autumn, after the first crop has been gathered. In order to effect this, the strongest canes, which in the ordinary course of things would bear a quantity of fruiting twigs, are cut down to within two or three eyes of the base; the laterals thus produced, being impelled into rapid growth by an exuberance of sap, are unable to form their fruit buds so early as those twigs in which excessive growth is not thus produced; and, consequently, while the latter fruit at one season, the others cannot reach a bearing state till some weeks later. Autumnal crops of summer roses, and of strawberries, have been sometimes procured by the destruction of the usual crop at a very early period of the season; the sap intended to nourish the flower buds destroyed is, after their removal, expended in forming new flower buds, which make their appearance at a later part of the year.

The season for pruning is usually midwinter, or at midsummer; the latter for the purpose of removing new superfluous branches, the former for thinning and arranging the several parts of a tree. It is, however, the practice, occasionally, to perform what is called the winter pruning early in the autumn, as in the case of the gooseberry, and of the vine when weak; and the effect is found to be, that the shoots of such plants, in the succeeding season, are stronger than they would have been had the pruning been performed at a much later season. This is necessarily so, as a little reflection will show. * * * * *

With regard to pruning plants when transplanted, there can be no doubt that it is more frequently injurious than beneficial. It is supposed, or seems to be, that when the branches of a transplanted tree are headed back, the remaining buds will break with more force than if the pruning had not been performed. * * * * Its roots are not fully in action, but from the injuries sustained in removing they are capable of exercising but little influence on the branches. The great point to attain, in the first instance, is the renovation of the roots, and that will happen only in proportion to the healthy action of the leaves and buds: if, therefore, the branches of a plant are removed by the pruning knife, a great obstacle is opposed to this renovation; but, if they remain,

---

* [A solution of gum shellac in alcohol, of the consistence of thin paste (put on with a brush), is an admirable application to wounds of stone-fruit trees, and others, which are disposed to bleed profusely. It is readily applied, adheres closely, excludes the air completely, and is less offensive to the eye than large plasters of clay, composition, &c. A. J. D.]

† "The vine often bleeds excessively when pruned in an improper season, or when accidentally wounded; and, I believe, no mode of stopping the flow of the sap is at present known to gardeners. I therefore mention the following, which I discovered many years ago, and have always practised with success:—If to four parts of scraped cheese be added one part of calcined oyster shells, or other pure calcareous earth, and this composition be pressed strongly into the pores of the wood, the sap will instantly cease to flow; so that the largest branch may, of course, be taken off at any season with safety." (*Knight*, in *Hort. Trans*, i. 102.)

new roots will be formed in proportion to their healthy action. The danger to be feared is, that the perspiration of the leaves may be so great as to exhaust the system of its fluid contents faster than the roots can restore them, and in careless transplanting this may doubtless happen: in such cases it is certainly requisite that some part of the branches should be pruned away; but no more should be taken off than the exigency of the case obviously requires; and, if the operation of transplanting has been well performed, there will be no necessity whatever. In the case of the transplantation of large trees, it is alleged that branches must be removed, in order to reduce the head, so that it may not be acted upon by the wind; but in general it is easy to prevent this action by artificial means.

In the nurseries it is a universal practice to prune the roots of transplanted trees; in gardens, this is as seldom performed. Which is right? If a wounded or bruised root is allowed to remain upon a transplanted tree, it is apt to decay, and this disease may spread to neighboring parts, which would otherwise be healthy; to remove the wounded parts of roots is therefore desirable. But the case is different with healthy roots. We must remember that every healthy and unmutilated root which is removed is a loss of nutriment to the plant, and that too at a time when it is least able to spare it; and there cannot be any advantage in the removal. The nursery practice is probably intended to render the operation of transplanting large numbers of plants less troublesome; and, as it is chiefly applied to seedlings and young plants with a superabundance of roots, the loss in their case is not so much felt. If performed at all, it should take place in the autumn, for at that time the roots, like the other parts of a plant, are comparatively empty of fluid; but, if deferred till the spring, then the roots are all distended with fluid, which has been collecting in them during winter, and every part taken away carries with it a portion of that nurture which the plant had been laying up as the store upon which to commence its renewed growth.

It must now be obvious that, although root-pruning may be prejudicial in transplanting trees, it may be of the greatest service to such established trees as are too prone to produce branches and leaves, instead of flowers and fruit. In these cases the excessive vigor is at once stopped by removal of some of the stronger roots, and consequently of a part of the superfluous food to which their "rankness" is owing. The operation has been successfully performed on the wall trees at Oulton, by Mr. Errington, one of our best English gardeners, and by many others, and, I believe, has never proved an objectionable practice under judicious management. Its effect is, *pro tanto*, to cut off the supply of food, and thus to arrest the rapid growth of the branches; and the connexion between this and the production of fruit has already been explained. It is by pushing the root-pruning to excess that the Chinese obtain the curious dwarf trees which excite so much curiosity in Europe. Mr. Livingston's account of their practice is so instructive, and contains so much that an intelligent gardener may turn to account, that I think it worth repeating here.

"When the dwarfing process is intended, the branch which had pushed radicles into the surrounding composition in sufficient abundance, and for a sufficient length of time, is separated from the tree, and planted in a shallow earthenware flower-pot, of an oblong square shape; it is sometimes made to rest upon a flat stone. The pot is then filled with small pieces of alluvial clay, which in the neighborhood of Canton is broken into bits, of about the size of common beans, being just sufficient to supply the scanty nourishment which the particular nature of the tree and the process require. In addition to a careful regulation of the quantity and quality of the earth, the quantity of water, and the management of the plants with respect to sun and shade, recourse is had to a great variety of mechanical contrivances, to produce the desired shape. The containing flower pot is so narrow, that the roots pushing out towards the sides are pretty effectually cramped. No radicle can descend; consequently it is only those which run towards the sides or upwards that can serve to convey nourishment properly, and it is easy to regulate those by cutting, burning, &c., so as to cramp the growth at pleasure. Every succeeding formation of leaves becomes more and more stunted,—the buds and radicles become diminished in the same proportion,—till at length that balance between the roots and leaves is obtained which suits the character of the dwarf required. In some trees this is accomplished in two or three years, but in others it requires at least twenty years." (*Hort. Trans.*, iv. 229.)

We have still to consider that peculiar kind of pruning which is technically called *ringing*. This consists in removing from a branch one or more rings of bark, by which the return of sap from the extremities is obstructed, and it is compelled to accumulate above the ring. Mr. Knight explains the physiological nature of the operation so well, that I cannot do better than quote his words.

"The true sap of trees is wholly generated in their leaves, from which it descends through their bark to the extremities of their roots, depositing in its course the matter which is successively added to the tree; whilst whatever portion of such sap is not thus expended sinks into the alburnum, and joins the ascending current, to which it communicates powers not possessed by the recently absorbed fluid. When the course of the descending current is intercepted, that naturally stagnates and accumulates above the decorticated space; whence it is repulsed and carried upwards, to be expended in an increased production of blossoms, and of fruit: and, consistently with these conclusions, I have found that part of the alburnum which is situated above the decorticated space to exceed in specific gravity, very considerably, that which lies below it. The repulsion of the descending fluid, therefore, accounts, I conceive, satisfactorily, for the increased production of blossoms, and more rapid growth of the fruit upon the decorticated branch: but there are causes which operate in promoting its more early maturity. The part of the branch which is below the decorticated space is ill supplied with nutriment, and ceases almost to grow; it in consequence operates less actively in impelling the ascending current of sap, which must also be impeded in its progress through the decorticated space. The parts which are above it must, therefore, be less abundantly

supplied with moisture; and drought, in such cases, always operates very powerfully in accelerating maturity. When the branch is small, or the space from which the bark has been taken off is considerable, it almost always operates in excess; a morbid state of early maturity is induced, and the fruit is worthless.

"If this view of the effects of partial decortication or ringing, be a just one, it follows that much of the success of the operation must be dependent upon the selection of proper seasons, and upon the mode of performing it being well adapted to the object of the operator. If that be the production of blossoms, or the means of making the blossoms set more freely, the ring of bark should be taken off early in the summer preceding the period at which blossoms are required: but, if the enlargement and more early maturity of the fruit be the objects, the operation should be delayed till the bark will readily part from the alburnum in the spring. The breadth of the decorticated space must be adapted to the size of the branch; but I have never witnessed any except injurious effects, whenever the experiment has been made upon very small or very young branches, for such become debilitated and sickly, long before the fruit can acquire a proper state of maturity."

The effects of ringing in altering the appearance of the fruit is very striking. In the *Horticultural Transactions*, iii. 367, the following cases are reported:—In a French crab, the fruit, by ringing, was increased to more than double the size, and the color of it was much brightened. In a Minshull crab the size was not increased, but the appearance of the apple was so improved as to make it truly beautiful; its colors, both red and yellow, were very bright. In the courtpendu apple the improvement was still more conspicuous, the colors being changed from green and dull red, to brilliant yellow and scarlet. Many others of a similar kind are to be found recorded in books on horticulture. It is, however, by no means alone to the maturation or production of fruit that this operation is applicable; it will, of course, induce also the production of flowers, and it has occasionally been used for that purpose, as in the camellia. It is best performed in the early spring, when the bark first separates freely from the wood.

This operation has, however, the disadvantage of wounding a branch severely; and, if performed extensively upon a tree, it is very apt, if not to kill it, at least to render it incurably unhealthy: for if the rings are not sufficiently wide to cut off all communication between the upper and lower lips of the wound they produce little effect, and if they are they are difficult to heal. For these reasons the operation is but little employed, other means being used instead. By some persons ligatures are made use of, and they would be preferable if they answered the purpose of obstructing the sap to the same extent as the abstraction of a ring of bark. In Malta, one of the objects of ringing, that of advancing the maturation of the fruit, is practised upon the zinzibey, or jujube tree, by merely fixing in the fork of a branch a very heavy stone, made fast with bandages; its weight forces the branches a little into a horizontal direction, and thus, independently of the pressure it exercises upon the parts it touches, obstructs the free circulation of the sap.

MANURE APPLIED TO THE SURFACE.

To the Editor of the Farmers' Register.

South Carolina, Oct. 19th, 1841.

Having lately made a report to the Agricultural Society of the district in which I reside, in which I stated my belief that the surface application of manures, especially to the corn crop after it is up, to be covered by the first working, was decidedly preferable to any other mode of applying it, the derisive stare of incredulity was plainly legible upon several countenances. Not that any seemed to doubt that I believed so, but a very large majority of the gentlemen present disbelieved the fact itself.

In the report I detailed and experiment of my own made in 1838, the result of which was sufficient to satisfy the most skeptical, had they witnessed it, and which, of itself, was abundantly so to justify me in coming to the conclusions I did, I also, in support of my opinion, made some extracts from an article in a number (10) of the second volume of the Register, pp. 643-4, over the signature of J. M. G., which, if I am not greatly mistaken as to who the writer was, is surely *good* authority with the whole *reading* agricultural community. Will he please to inform us through the Register whether he has made any further experiments, and what his present opinion is on that subject?

I happened to have only the number of the volume in which his article appeared, nor have I any volume of earlier date than the sixth, or I might in all probability find corroborative testimony from other writers, or from J. M. G. himself. My 6th, 7th, and 8th volumes are at the binder's, consequently I cannot refer to them. But in the last number of the Register, I had the satisfaction of finding, in the extracts from Gen. Emory's Address, the very thing, of all others, I most desired to see. He says, (after giving an account of some experiments in turning in the oat crop in its green state,) "I do not expect to have my opinion changed, and expect confidently to remain where I now am, and have been for a long time, a firm believer in the propriety of surface manuring rather than turning it under. I have never been disappointed in weeds or other manure spread upon the surface and allowed to decompose there, and thus become absorbed by the soil." Again, "This experiment much better accords with the theory of surface manuring, which seems rapidly to be gaining ground every where." Now, sir, I would not take the price of the Register for one year, for this single article. As I heard a political friend once say, after going from one district, in which he expected but a very few votes, into another where he was well received and counted on all: "It made me feel like going out of a snow storm into a warm bath."

Gen. Emory has even gone farther than I have; for I did suppose that the *turning in* of green crops was the *ne plus ultra* of improving our land with putrescent manure; and in my report recommended it, in preference to the tardy and laborious practice of making and hauling out such as is usually applied.

Is it best to "follow nature," and allow our green crops to rot on the surface? Do, sir, give

us that are in the dark "more light" on this subject. Invite such as have had any experience in the matter to come out and "show their hands." Let us not be content to carry our pumpkins in one end of the sack, with a rock in the other end to balance them, because our fathers did so before us.

There was a resolution passed at our meeting, to forward the reports that were read on various subjects, (amounting to four in all,) to the editors of the Farmers' Register and Temperance Advocate for publication, but as some of us have come to the conclusion since, that, as the reports were elicited by a call from the State Agricultural Society, through the district society, they are their legitimate property, to do what they may think proper with, and, consequently, it would not at present be proper to publish them, the resolution will not in all probability be complied with. These are the principal reasons why this communication is made. For if my report had been published, it most probably would have drawn out all the information now sought for.

In conclusion, sir, permit me to congratulate you, and all those for whose interest you have so ably contended, on the result of your bold and daring adventure of "boarding the lion," the "great monster bank," in his den. S.

SWEET POTATOES.

From the South Carolina Temperance Advocate.

The best plan of raising sweet potatoes, agreeably to my experience, is as follows:

Some warm spell in March, I would say, about the middle, take your seed potatoes from the stack, cellar, or where they have been preserved during the winter. Sort out such seed as you would like to plant, and bed them in fresh earth, some potatoes and some earth, until you have as many as you need. Then leave the bed exposed to the weather until planting time. In so doing, the potatoes will sprout. Prepare your ground, which should be sandy soil if you have it. Old land is best if manured. Cowpen land is preferable. Any other manured land will do, except hog-pen. I have tried hog-pen and hog manure three times, and it has failed every time. The potatoes will come up very bad, and directly begin to fire, and finally die. You should plough your ground by the middle of March, and continue to plough it about every ten days until the 15th or 20th of April; then check your land three and a half feet, and make your hills small; then raise your seed carefully, about three in a hill. I believe cutting the potatoes in small pieces to be injurious. Plant them whole. If you should wish to plant in ridges, cut a channel on the top of the ridge and lay in it a potato every 10 or 12 inches. Planting at this season, the potatoes will come up in a few days, and grow finely; whereas, if planted early they will not.

When they want work, plough and draw up dirt with a hoe. Which of those two plans is best, I can hardly say, although I believe the ridge will make the most, but the hill the largest.

I have planted yam potatoes for several years, and generally bed my seed in March. In doing this, I scrape a little of the surface off about 2 inches, and lay the potatoes thick on the ground, and cover with the soil very light; plough your patch as before directed, until the plants come up from 4 to 6 inches high. When there is appearance of rain, make as many ridges as you have plants for. When you get a season, set your plants in as you would cabbage or any other plants, 10 inches apart, and as the plants become large enough, set out as before directed. I believe they will bring a tolerable good crop, when planted as late as the 4th of July. But the sooner the better. Sometimes, however, we get no seasons, and can hardly raise them in this way. Therefore, I have tried planting them in the hill and ridge as other potatoes, and have been successful in raising them in this way. I raised the largest ones last year I ever saw; they weighed as high as seven and a half pounds. I have the red, Spanish and the yam; the red grows large, but of them all, I think most of yam.

The next is how to preserve them during the winter. I have tried several plans, and the plan most successful is in hill or stack. Scrape out a hole about 4 inches deep, and as round as you well can, large enough to hold 25 or 30 bushels; then place heart pine boards in the bottom; then pine straw, a good layer under and over the potatoes. Then stand corn stalks very closely all around the straw. Then cover with dirt. The stacks should be covered so as to keep the rain and cold from them. Perhaps I should say something about the time and manner of digging! The vines should be well frost bitten before digging, and I am of the impression that they ought to be let stand several days after frost. The potato, hull or peeling will harden very much by standing, and the potato is not half so apt to bruise and injure in putting away, and I believe if the potato vines were all cut off as soon as frost bitten, it would be an advantage to the potato; for when the vine is frost bitten, the sap is inclined to run back to the potato, and if the vines were cut off, it would prevent the sap's returning. The potato would be drier, and perhaps not rot so soon.

My common mode of gathering them is with the plough, first dragging the vines away, then plough the hill or ridge followed with hoes.

July 22d, 1841. GEORGE BOZEY.

MELILOT AGAIN.

To the Editor of the Farmers' Register.

Dear sir:—The pressure of cares and business, and a greater portion of ill health than has ever before fallen to my lot, have long prevented me from attempting a contribution to the pages of the Register. To tell the truth, sir, I got such a castigation the last time any of my efforts appeared there, that I have doubted much whether I ought not, in future, to keep my shoulders out of the reach of such a *cat-o'-nine tails*, as your correspondent "Commentator" wields. But, sir, I love the Register, and the objects which it is intended to promote, and while its editor encourages me to write, I shall feel it a privilege, when circumstances allow, to exert my humble efforts in the noble cause.

Some time last fall or winter, I wrote you a private letter, of some length, containing statements, and (as I believe) some inquiries, on the subject of melilot, an extract from which was published in the Register. The number containing this being mislaid, I can recollect nothing of it, but what is alluded to by Commentator. It may appear strange that I *should* "choose to thus pursue a matter which" I "did not designedly commence," or, that I should be so disposed to magnify melilot—a thing of which I have professed to know so little—as to trouble your readers with it again. In so far as I or melilot may be concerned, I believe—in gambler's phrase—that the game is not worth the candle. But, sir, I do think that it is very important, both to agriculture and the Register, that the kindest courtesy should be felt and employed by your contributors. Whenever our agricultural periodicals become arenas for gladiators of the quill to fight upon, he who never reads them will probably be the best and happiest man.

I do not charge upon Commentator the use of any rude expression. But, in his remarks on my statements with regard to melilot's growing only in calcareous soils—to its being easily turned under with ploughs made by Clute and Reagles, and its affording fine grazing for sheep and cows in winter—he insinuates very strongly a charge of incredibility. Now, sir, these "assertions" were made in a hasty letter to a friend; but I find only one word, which needs the slightest qualification, and that is the word "easily." It certainly is not very *easy* work to the team, but in comparison with the beneficial results, almost any one would say it may be easily done. It is true Commentator does qualify his skepticism in this particular, by supposing that I mean that I can plough this plant under before it reaches half its ordinary growth in good land. I neither claim nor need the benefit of any such supposition. I reside in a region where the melilot grows to the height of six feet, and sometimes higher, having an undergrowth of tender, luxuriant, and not very strongly odorous branches, which live through winter here—latitude about 37½ north, according to our maps—although they may be as "dead as door-nails" with you and with Commentator. As soon after sowing wheat as practicable, I begin to break up my next year's tobacco ground. On a part of one of my lots melilot grows most luxuriantly. With one of the large ploughs made by Clute and Reagles of Schenectady, New York, I turn it under, and it makes bigger and better tobacco, without any other manure, than the remainder of the lot will do, with all the manure I can put upon it. This is more remarkably the case with one of my neighbors, who has much more melilot than I have. I do not feel at liberty to use any man's name, without his consent—he is now far from home—lest I might hold him up, to be pelted by some commentator. But, I will, in a private letter, which I beg you to keep private—reveal to you his name—and no authority can be better—and I trust that you will visit us this fall, and see him, with a plough made by Clute and Reagles, bury his grand crop of melilot.

As to my sheep and cows eating melilot, they may be great fools, for aught I know, or have very bad tastes—they certainly eat it, whether from love of it, or from sheer mischief, I cannot say, but they most certainly have exterminated a fine patch of it in my standing pasture, in less than two years—leaving not a sprig. Nor is this from starvation, for they are never very poor. I cannot say how they might compare with more dainty competitors, a little farther north, which probably are furnished with more savory food; but I love to see them eat—even melilot, and sometimes brag of them. Indeed, shame on their master to let Commentator know it though, I have lately ascertained that my horses will eat melilot, while in bloom, *in summer*, (when cut and a little wilted,) discovering no preference between it and clover when put together in a manger. It was wondrous kind in Commentator, after ridiculing my poor sheep and cows for eating melilot, to give them leave—and that in Latin too—to continue the practice, as long as their wiseacre of a master may imagine that they enjoy it. It might be entirely out of fashion, in the present day, to defend the odor of melilot; but I can recollect very well when our grandmothers, who—in matters of taste as well as in many other things—knew *what was what*, full as well as some of our *very well-informed* and *accurate* commentators, were pretty sure to perfume their salve with it.

But it seems that I said, that melilot "will not grow in other than calcareous lands." I dare think so still. In this region, if my observation be correct, it only grows about old settlements, which have doubtless been rendered calcareous by ashes. You have stated, that there are also occasional veins of calcareous land in the state, particularly in its tide-water region. Such I should expect to find at Todsbury, and elsewhere, occasionally, in the Gloucester flats. I know nothing of the marl indicator of the lower country, but I should look upon melilot as an indicator of lime, wherever I might find it. And in this, I think, you would bear me out. It probably may not grow on calcareous lands when poor; but we have abundant evidence in this neighborhood, that after such lands have become fertile, it will retain them in that condition? We might judge, *a priori*, that it would do this, being of the trifolium family, and affording a prodigious quantity of vegetable matter. Is such a quality of no value? Would not any vegetable which can enable land to retain fertility, also cause it, if we could learn to make such vegetable grow upon poor land? Were gypsum properly applied to melilot, might it not secure its life, on poor land? I am ignorant, and hope there is no harm in asking a few questions. It cannot hurt even a young farmer, to try a few small experiments. I have entirely failed in mine, upon what I consider poor calcareous land, as it effervesces with acids and has a great many calcareous concretions in it. However it might be with wheat farmers, it certainly would be an acquisition to us tobacco planters, to be able to grow melilot, at pleasure. Our soils do not generally produce clover kindly. We need some hardy grass, and if a trefoil, so much the better, to aid in furnishing vegetable matter to the land. I have tried a variety, such as English rye-grass, tall oat-grass and orchard-grass, as yet without much success. The wild rye, which grows voluntarily, in rank patches, all over my farm, and which I thought promising, has, like the melilot

so far, refused to come under artificial management. It has not come up, when sown. The Guinea and the Gama grasses are too expensive for extensive operations. I have concluded, unless you can teach me to raise melilot, to rely mainly upon clover, herds-grass and timothy. Should I happen to consult you, in future, about some *poke-root* project, I pray you to keep it a secret from "Commentator."

What I suppose to be about the true state of the case is, that melilot was not only an old acquaintance of, but was regarded by Commentator with the prejudice which usually falls to the lot of an old enemy. It stunk in his nostrils. He could afford to it neither thought nor feeling, except hatred, and was probably quite ready, as is now the fashion among writers, to brand as an agricultural heretic, or compare with the foolish old dolt of a *poke-root* farmer, any one who might even make it an object of inquiry. Now I, sir, was never an extravagant admirer of melilot, but having acquired the knowledge of some facts which disposed me even to give *it* its due, I, very harmlessly, as I think, wrote a pivate letter to my friend and agricultural adviser, in which I made some statements and inquiries, which he thought proper to publish. For this I certainly did not blame him. It was rather an evidence that he considered the matter worth attention. I felt as safe under the cover of the Register, as my person would have been under the sanctuary of his private dwelling. But I was hauled out and drubbed as unmercifully as if I had written a partisan letter to the editor of a political, or any other newspaper. Flogging is by no means a pleasant operation to its subject, at any time. But when a poor wight, who deems himself both innocent and safe, is caught and thrashed at an improper time and place, for the mere sport of the executioner, it comes rather *lighter* than when he is kindly told and feels that *it is all for his own good.* My object in writing this, is, by no means to quarrel with Commentator; but most earnestly to remonstrate against the admission into the Register of attacks upon its contributors, whether voluntarily so or not. Kind and liberal strictures ought to be made upon their erroneous opinions, but personal asperities should, by all means, be avoided. I repeat that I love the Register, and look upon it as almost the last spot of public ground left, in this country, for heavenly peace to rest her foot upon. Now, if Commentator will pardon such presumption, in one who ever gave a favorable thought to melilot, I will venture very humbly to *advise* him most carefully to read "an Address to the Farmers and Planters of Virginia," by James M. Garnett, esq. It is in the very same April number in which I got my *killing.* He will there find what deep indignation has been excited in the bosom of that amiable and venerable patriarch, by the mischief (and I fear ruin) produced by the swarms of demagogues in the land, and "their vile party-newspapers." And, I trust, he will be ready to unite with that benevolent father in agriculture in his endeavors to protect farmers and their beloved Register, from the slightest infusion of such bitterness. The truth is, as I believe, that Commentator, however long he may have known melilot, was not so well acquainted with it as he himself, or you, sir, thought him. He seems to have been ignorant that the young growth lives through winter, as well as young clover—that stock are fond at that season of grazing it—that although, in summer, it forms almost an impenetrable thicket, yet, as soon as its vegetable life departs, it becomes very brittle, and by the last of November, especially if stock roam through it, many of its branches lie in broken fragments, like half rotten twigs of brush-wood, on the ground; and that, in this state, with a good four-horse plough, the *monster* can be *easily* ploughed in. He moreover appears to consider it only in the light of a crop precedent to small grain. However "indestructible an occupant," it may appear to be in summer, any tobacco planter may find that it can be subdued in the fall, and that it will rot in time to be an excellent manure for the succeeding tobacco crop. I suspect that neither Commentator nor I would sustain injury by reading over the fable of the chamelion and the travellers.

I will not say that Commentator intended to jeer me for mentioning Clute and Reagles' plough; but, in his singularly felicitous style for satire, he has referred to it with a frequency, and in a way, which led me to suspect a *taunt* was designed. In writing to a friend, who (as I believed) knew my high opinion of this kind of plough, I mentioned it, without intending to boast the possession of a rare implement. It is indeed, in this region, too *rare* an implement. But, I trust it will not long remain so, as our farmers are beginning to inquire after it, eagerly. It has the *rare* quality of being made for use, as well as for sale, and, I judge, it is made by men of *rare* honesty. I think if you knew it, you would strongly recommend it. Its *ground-work* is made of cast iron, of great strength and durability, and its wood-work is of excellent timber, excellently put together. It turns the sod admirably, and is so constructed that the near-horse is always on the firm ground, while the off-horse walks in the furrow-track. There is consequently no scuffling for firm footing, which often wearies the horses more than—without this—their day's labor would do. In our light high lands, two horses can draw a plough intended for four in the stiff grass lands of middle New York, with less fatigue than is produced by the draught of any other two-horse plough I have ever tried, cutting, at the same time, a furrow-slice at least one-third wider.

I have now endeavored to reply to the commentaries of your correspondent, except in so far as relates to my name. In this matter, I think I have very good reasons for keeping profound secrecy. I certainly signed my name to that unfortunate *melilot* letter, for which I got thrashed while horsed upon your shoulders. I, of course, am known only to you, I have no idea of imitating a wild young springal, whom I once knew. For the perpetration of a nightly prank, he blacked himself, and being detected by a negro, was so severely flogged by him, as to feel compelled to avow his name. Rumor began very speedily and unpleasantly to spread the report of this feat. Whereupon, by way of counteraction, he resolved to expose his back in public. When behold, the stripes and bruises stood as thick and indisputable witnesses of a *fact*, which before was thought to be a mere *joke.* If Commentator wishes to whip me again, I must beg, that it be

done still in the dark. Besides, sir, as you speak of him in such high and doubtless merited terms of respect, and as I also feel confident of your friendship, I could wish, for all our sakes, that "quoad" melilot, (and certainly no farther,) we may remain perfect strangers. I consider that he has sinned much more against the Register than against me. If he prefers a fictitious name, to no name at all, and thinks he has not whipped me enough, while I would wish him much better employment, he may try me again as

THE OLD POKE ROOT FARMER.

PRAIRIES OF ARKANSAS.

From the Agriculturist.

Messrs. Editors :—In a former communication I promised some general remarks upon the prairies of Arkansas; at present these remarks will be confined to those near the Red river. It is known that a prairie is a field or tract of land destitute of trees or even shrubs, generally covered with a thick coat of grass or weeds. These fields are not confined to any peculiar kind of soil or degree of depression or elevation—they are met with in the rich alluvion of the large rivers of the west, and again they form an immense plane stretching from the valley to the highest point of the surrounding hills. What cause has produced these immense plains destitute of trees, is the question proposed to be examined into. There are but three prominent preventives to the growth of trees in every region of the earth: *absolute sterility*, such as pure sand, chalk or pure marl; when water occupies permanently a space, trees will not grow; where there is a sufficient quantity of combustible matter for the action of fire, trees are not permitted to grow, and if they have succeeded in any way to gain a footing, this powerful agent is capable of destroying them while young. Sterility cannot be the cause from which the prairies of the west have sprung; they are very often the richest soils known in the United States. To the action of the two opposite elements, water and fire, they must be attributed. This will appear more satisfactory by a minute examination of some of the smaller prairies. At the present I shall confine my remarks to the small prairies on the Red river. These prairies are small, and present a striking contrast, as far as soil and general appearance is concerned. A chain of these fields stretch from the Louisiana line to the great western prairies immediately on the margin of the river. The low grounds of Red river are generally from four to ten miles in width, nearly level, though if a line should be drawn across the valley it would show a gentle declension from the centre to the edges of the valley, the river invariably occupying the apex of a ridge formed by the continual deposite of earthy matter suspended in its waters. This chain of prairies is situated in the valley and commonly in the curves of the river—they present a contrast with the woodland immediately surrounding them. The soil of the prairies is a deep rich mould—the woodland is a stiff aluminous soil, with a portion of impalpable silicious and calcareous matter. The size of these prairies varies from one hundred acres to several thousands, and from one to four feet higher than the woodland, and are for the most part gently rolling, the highest part being the centre. In shape they are quite irregular, though commonly elongated, in conformity to the course of the river.

Those prairies that are the finest cotton lands in the state and perhaps in the world were once the beds of lakes. What has produced so great a change as to render the basin of a lake fit for a cotton field, is the question before us. When occupied by water, they of course were lower than the surrounding woodland—at the present they are higher. There is undoubted evidence that that portion of the state has once been the seat of extensive eruptions from earthquakes. The pressure caused by such an agent would affect the crust of the earth; that portion of the surface covered with water being more soft than the woodland, would more readily yield to the pressure, which has given them such an elevation above the surrounding woodland that the water no longer finds a basin to rest in. The water being removed, their rich surface would soon become thickly set with what is called prairie grass, that is found on all prairies from Canada to California, and by the immense amount of combustible matter it produces, forms ample means for keeping off intruders—a single spark of fire is sufficient to set the whole in fearful conflagration. It happens that the action of fire is suspended or prevented, affording an opportunity for the growth of timber; in this manner, in the course of a few years, a few hundred or thousands of acres have been wrested from the meadow and appropriated to the production of timber. So soon as settlements are formed near to prairies and the action of fire prevented, trees spring up rapidly and in a few years form a forest. The opinion offered above as to the formation of these prairies, is sustained by a fact known to some of the present generation. The earthquake of 1811, which had its seat near New Madrid in the state of Missouri, produced similar effects, elevating the basins of lakes and emptying their contents upon the surrounding country—in one case there was a mill upon the drain of a lake that was elevated several feet.

There is a second class of prairies near the Red river, occupying high land—these differ in many respects from the former, though only a few miles distant from them. The soil of the latter is highly calcareous, resting in every instance on a deep deposite of carbonate of lime of different degrees of purity. This deposite has been penetrated to the depth of from 60 to 80 feet without any apparent change, being filled with fossil shells from the surface to the greatest depth. The surface of these prairies is uneven and generally much higher than the adjoining woodland. These prairies are situated on a ridge considerably elevated. There can be no doubt entertained but that the whole space they occupy has, at some anterior period, been the bed of some vast body of water, doubtless the Gulf of Mexico. The shells that are found on the surface are marine shells, in a high state of *petrifaction*. To account for their formation it is only necessary to admit that which is *self-evident*, that the *lime* formation which constitutes the foundation was once in a soft state readily yielding to verticle pressure, but as some parts would be more dense than others, these sections would of course be less affected by such pressure; this has caused the inequality of the surface. The

detritus and decomposition of the mass of lime and decay of vegetable matter, has spread a rich covering of soil highly calcareous, rich and well adapted to the cultivation of cotton, corn, wheat, and many other articles of consumption and commerce.

What has been attempted to be proved respecting these small tracts of prairie land, may be safely asserted with regard to all similar phenomena; where absolute sterility prevails, as in the deserts of Asia and Africa, the question is at once settled; but this is not the case in regard to our prairies; they are often more fertile than the land upon which timber is growing, so that we must seek for an adequate cause in some other agent or agents. Water and fire are by far the most powerful agents that act on the earth. They are fully competent to produce the effect now under consideration. The former of the agents has at one time asserted almost universal dominion over the American continent, leaving only a few peaks of the higher mountains; these waters have been removed by some powerful cause to other and distant locations, leaving their bed to become the nurturing spot for vegetation. By the action of fire, no plants but annuals have been permitted to assert their dominion over these immense plains. There can be no doubt that the same cause that has produced the American prairies, has caused those extended plains in the south of Europe and the north of Asia.

I have not seen any theory respecting the formation of prairies; there may be those far more plausible than the one so briefly sketched above; if so, the writer is ignorant respecting them and their authors. In conclusion, it is but just to our new state to add, the prairies, mountains, rivers, springs, minerals and plants of Arkansas, present a wide field for investigation. The geologist would find an ample field for observation. There has yet been no survey made, except a running trip by Featherstonhaugh, in which he could see but little, and of that little he said almost nothing, except that he met with the old red sand stone.

W. W. STEVENSON.

MALARIA.

From the Edinburgh Philosophical Journal.

On the spontaneous evolution of sulphuretted hydrogen in the waters of the western coast of Africa and elsewhere.

In the course of a lecture on this subject, delivered at the Royal Institution, by Professor Daniell, he observed, that it was curious that the impregnation of the waters of Western Africa with this deleterious gas had so long escaped attention. In water seaward forty miles its presence can be detected; and it exists in considerable quantity in the Volta, in Lopez Bay, in the Grand Bonny, &c.; it spreads over an area of 40,000 square miles, from about 8° north to 8° south latitude. The origin of this vast accumulation of sulphuretted hydrogen, Mr. Daniell attributes, not to volcanic action, not to the decomposition of pyrites, nor to the process of the decay of animal matter, but to the action and reaction of the vegetable matter carried down by the tropical rivers, and the sulphates always more or less present in sea-water. This, moreover, he has proved by experiment. Last winter he placed some fallen leaves in a jar of new river-water; also a similar proportion in a second jar, with three ounces of salt, and in a third, with a like quantity of the sulphate of soda—all closely stopped, and a card-board, with acetate of lead, over each. After having been kept three months in a warm closet he examined them. The first emitted the common smell of decayed leaves; the second that of a pleasant conserve; but the third, no words could convey the stinking odor, nauseous beyond all description. This of itself was sufficient to establish the generation of sulphuretted hydrogen; but further, the usual blackening of the lead of the card-board in this jar only left no doubt on the matter. Wherever, then, sea-water holding sulphates in solution mixes with fresh water and vegetable matter, this gas must be produced, and its effects on animal life are well known. It is a record in Italy, as well as in Essex, that where the sea has been prevented flooding the marshes, that locality, previously very sickly, had become perfectly salubrious. To sulphuretted hydrogen, therefore, Mr. Daniell ascribes the dreaded malaria, as also the deadly stinking miasma of Africa, producing languor, nausea, disgust, and death. The jungle-fever of India, also, he thinks attributable to its presence. The soil abounds with sulphates of magnesia and soda; must not, therefore, quantities of sulphuretted hydrogen be generated in the jungle-swamps? Besides the direful consequences to the health of man visiting the deadly shores of Africa, this sulphuretted hydrogen does him great injury in a commercial point of view. The copper-sheathing of vessels is rapidly destroyed. Mr. Daniell exhibited a sheet taken from the Bonetta in August 1840, on her return from the African station. Although new not many months before, it was eaten into holes, with a deposite on the one side of the protochloride of copper, and of the black sulphuret of copper on the other. A plate exhibited, taken from the Royal George, was in a good state in comparison with it. The latter had been acted on for sixty years by sea-water, but, be it remembered, by sea-water alone, not impregnated with sulphuretted hydrogen. On it there was no trace of a sulphuret. These, then, were the two principal and important points illustrated by Mr. Daniell; and the question put by him, and answered in the affirmative, was, Can science indicate a remedy for these evils? For the former, fumigation with chlorine. Chlorine and sulphuretted hydrogen cannot co-exist. Chemical action instantly takes place; sulphur is thrown down, hydrochloric acid formed, and malaria and miasma nowhere; the destroyer destroyed. For the latter, the destructive agent is not decomposed, but its action is directed to a less costly material. Copper is to be protected by zinc, for which sulphuretted hydrogen has the stronger affinity; and so long as the latter metal is present, the former is free from the attack of the gas in solution. This, it will be readily seen, is Sir H. Davy's principle, which involved the use of zinc or iron; but in the case of sulphuretted hydrogen, zinc and not iron must be employed. Mr. Daniell regretted that Davy's zinc-protectors had been so soon abandoned, and only because the copper, not acted upon by the muriatic acid, became a nucleus for earthy,

vegetable, and animal matter, and the ship's bottom was in consequence fouled, as it is termed. The remedy for this, he said, was most simple. Let the protectors be so arranged that contact may be broken and renewed at will. The zincs and copper separated for a short time, the earthy deposites would soon be removed. In consequence of Mr. Daniell's report to the Admiralty, chlorine has been furnished the Niger Expedition, and no ship hereafter will proceed to the African station without that purifier in store, nor without zinc protectors for her copper. It is to be hoped that all shipowners will follow the example of the Admiralty Board in this respect.—*Literary Gazette*, No. 1272.

EXTRACTS FROM GEN. EMORY'S ADDRESS BEFORE THE MARYLAND STATE AGRICULTURAL SOCIETY.

You will see to-day, gentlemen, a great display of fine stock; perhaps many if not all the favourite varieties now so highly esteemed in Europe and this country. Of the horse, which justly stands at its head, as the noblest and most generous of the quadruped creation, you will see several varieties from the high bred racer, which imparts in all his crosses spirit, activity, power and endurance, down to the nimble and sure-footed Canadian—crosses between the two varieties will give you (always excepting the thorough-bred) perhaps the quickest, the hardiest, the most tractable and best horses for light draft, or for the saddle, to be obtained from any other source.

You will see the noble and beautifully formed Durham short horned cattle, bred in England by judicious and scientific farmers from the Teeswater and the Holderness varieties, through so long a period that they have acquired much of the fixed characteristics of a native or original breed. For great size, and beauty in the eye of the butcher, so keen to detect the value of neat beef, with little offal, and for the quantity of milk they give, they stand unrivalled. There is a prejudice against these cattle among some who do not consider the necessary relation which exists between the size of an animal and the quantity of food which is required for his subsistence—between the waste from a very great secretion of milk and the necessity which exists of regularly and abundantly repairing this waste by nutritious food. These cattle require generous treatment in the pasture and in the stable, and with this, they shine pre-eminent above all others. In my opinion it is a great mistake to suppose them more tender than other breeds of cattle; with plenty of rough provender *regularly* supplied, they are able to rough it in inclement weather, with any other race with which I am acquainted.

The Ayrshire cattle are regarded by some as an original race, but the best information leads us to believe they derive their lineage from much the same source as the Durhams—these they resemble much in color, form and qualities, and their diminutive size may very probably be the result of a more rigorous climate and a more scanty supply of food.

Of the *Herefords*, very few have been introduced into this country, and I shall therefore pass them by and proceed to the consideration of the *North Devonshire* cattle, as the race which in many parts of England and this country are regarded as the rivals in excellence of the short horns. The Devons, as they are called, are neat, well formed animals of a beautiful mahogany red colour, without any white; they are muscular and strong and of about two thirds the size of the short horns. Like the latter they are proverbial both for their early maturity and aptitude to take on fat, and these high qualities alone are sufficient to induce any respectable breeder of cattle to incur the expense of acquiring the one or the other race. The gain from these advantages in a series of years is very great indeed, and the society will be surprised to know that at least three-fourths of the improved cattle of England go into the hands of the butcher before they are three years old. The Devons are not as deep milkers as the short horns, but their milk is considered to be of richer quality than what is taken from any other cattle except the Alderneys, a race, inferior for all other purposes except as milch cows. When the union of the three qualities for milk, beef and work, are desired in the same breed of animals, none is superior to the Devons, and none other will bear even a comparison with them, except the Herefords. Between the short horns and the Devons I am at this time making a course of experiments and observation on my own lands, with the view of ascertaining which of the two, under all circumstances, are the most suitable for the section of the country where I reside, which I hope may not only be useful to myself but to others.

Fine woolled sheep are unfortunately not now in request in the country, although few things, at a fair price for wool, will afford a more profitable return for the capital employed and the current necessary expenses, than fine woolled sheep. We all recollect how profitable Merino sheep were for a short time for their wool, and how suddenly they fell to be worth scarcely any thing. If there is a great fault in the management of our people, it is, that as soon as it is ascertained that any thing is profitable, every one is disposed to go into it, and it is soon run to death. If there is a grievous fault in our political system, it is the uncertainty and the unsteadiness of our laws. The law to-day may justify a man in embarking his whole means in a particular pursuit, and a change of the law to-morrow, may leave him ruined and a beggar. These instances are unfortunate exceptions in our system to the general rule of wisdom and prosperity.

Fine woolled sheep being now out of the question, I will confine my remarks to the South Down, and New Leicester sheep, now the favorites of the day. Having myself the three races, including Saxonies, in great purity and carefully kept separate and bred in distinct flocks, what I shall say of them is the result of my own observations corroboratory of those of others.

The South Down sheep are beautifully formed, hardy, strong and active; the wethers when well raised averaging, at three years old on grass, over a hundred pounds in the carcass—having flesh of great juiciness and delicacy, and the fat well marbled through. No mutton is superior to it—none other perhaps is its equal when quantity as well as quality is taken into the account. The wool is short and fine, too fine and light to be as valuable

as that from some other breeds, particularly the Leicesters, which have in quantity about one-third more. The South Downs are early at maturity, apt to fat, and feed alike well on hilly as on flat lands. They are considered in England as a native or original breed, only improved by breeding in, and I am persuaded the root from which they have sprung is the breed of speckled legged sheep imported into this country some fifty years ago—some of which I have now on my lands unmixed and pure, and not much inferior to the present South Downs, having much the same qualities.

The New Leicestershire sheep were first called the Bakewell's, from the name of the breeder, then the Dishleys, from the name of Bakewell's residence, and lastly, the Leicestershires, from the county which has now almost universally adopted them. They are also beautifully formed sheep, having very large carcasses, well covered with wool. They arrive early at maturity, and are wonderfully prone to fat—but they do not afford mutton fit for the table of the epicure—The quantity of lean or muscle of these sheep is disproportionately small, and is so *covered* with fat that it cannot be roasted. Like the Chinese hog and Mr. Bakewell's cattle, the fat is chiefly laid on the *outside* of the frame, and hence the meat is not marbled. Like Mr. Bakewell's cattle they are also an artificial race, and are not hardy. His cattle have gone out and are extinct, but his sheep, standing the test of time and trial better, remain, and they have been so long bred in, that according to my experience they are not now so inclined to breed back, as it is technically termed, as they were twenty years ago, and have assumed from long breeding in, like the short-horns, much of the fixedness of an original race. They are particularly suitable to flat rich lands, like the county of Leicestershire, and are wholly unsuited to hilly lands where they have to climb and work for their sustenance.

There is unfortunately a sort of mania which pervades our country once in a while in favor of a particular thing or a particular kind of stock, which is scarcely limited within the bounds of reason. The Merino sheep have had their day—the blood horse his day—improved cattle have had their day—the mulberry fever has raged and it has left the patient in a complete state of collapse. These over-zealous efforts might even produce benefits by disseminating a good thing through the country; but sometimes they are so overdone, as to produce destructive and revolting reaction. The pig, the hog, is now lord of the ascendant, and more particularly attracts the attention of the whole country than any thing else in the farming way. Mr. Lossing, Mr. Bement, Mr. Martin and Mr. Hurlbut, not forgetting our worthy friend in Hollins street, are the great men of the day, and if they do not quarrel too much among themselves, we may yet chance to elect one of them to the presidency. You will see here all the favorite varieties of that useful animal the hog, now become so universally popular. The amateur in good hams, and the speculator in pork and lard, may feast their eyes here to-day, to their hearts' content. The truth is, it would seem, we have been so long required by rescript "to go the whole hog," that we now go him voluntarily and from pure choice.

It is very strange, but it is nevertheless a fact, that there are some practical farmers who, (losing sight of earlier maturity, greater aptitude to fat, and superiority in the quality of the meat) deny that the improved breeds of stock of England are any better for our purposes, than the old stock found upon our estates some thirty or forty years ago. I feel able to speak from some experience on this subject, and to say that the ox or the wether averages now, upon my farm, at least twice the weight they did forty years ago, and the meat being of much better quality, they will sell for nearly three times the prices they sold for at that time. But in proof of the gross error of such opinion, I will offer you far better testimony than that of my own experience.

By the estimate of "Dr. Davenant, made in the year 1710, the average dead weight of black cattle, (so called because most of them were then black,) was only 370 lbs., that of the calf 50 lbs., and those of sheep and lambs, taken promiscuously, 28 lbs."

Mr. M'Culloch, in his Dictionary of Commerce, a book having the accuracy of a law book, makes an estimate 120 years afterwards in the same (Smithfield) market, and puts the weight of cattle "at 550 lbs., sheep at 50 lbs., and calves at 105 lbs."

Mr. Youatt, who has recently prepared a most valuable book on cattle, published by the Society for the Diffusion of Useful Knowledge, estimates the present average to be 656 lbs. for cattle, 90 lbs. for sheep and lambs, and 144 lbs. for calves: being about double the weight of those animals as estimated by Davenant, one hundred and thirty years before.

More conclusive proof could not be adduced, and it should be borne in mind that all this wonderful improvement commenced with the celebrated Mr. Bakewell about 60 years ago.

Mr. Youatt very properly remarks, "that it was a disgrace to the agriculture of the times, that Bakewell should have been suffered to pass away without some authentic record of what he effected, and the principles that guided him, and the means by which his objects were accomplished." It is greatly to be regretted that he who had thus worked out such wonderful results as almost to be able to breed his cattle and his sheep to any pattern which his imagination might suggest as desirable, should have passed away without leaving behind him the disclosure of the secrets of his great art. That he was governed himself, however, by an extraordinary judgment in the application of the soundest philosophical principles has never been denied. After his death, this omission excited the scientific men of the time to an inquiry into the principles which had governed him—the subject of procreation became for the first time an object of analytic inquiry and investigation, and among many other speculations, the valuable and scientific essays of Mr. Surgeon Cline and Sir John Sebright were elicited and given to the world. These essays are to be found republished in the 3d and 7th vols. of the old American Farmer, and are worthy of perusal, because they are fraught with a large store of practical knowledge, as well as sound philosophical speculation. Since then and very recently, a new theory upon the subject of breeding has been started by Dr. Walker, who, availing himself of the light already shed upon the subject, makes new suggestions well

worthy of the consideration of all investigating minds. This bold, but scientific innovator, explodes the old aristocratic notion of the *qualities* of *blood*, and lays down some principles in breeding as novel as they are instructive.

Does it then admit of a question, I would ask, whether the American farmer shall avail himself of the improvements made in England during the last fifty years in live stock of almost every description, and of the lights which have governed her people in reaching their present point of improvement? I should think not. Proud as we may be of our own country, and of our own prowess, it cannot discredit us to avail ourselves, whenever in our power, of the labor, the improvements, and the skill, if you please, of others—even if they had originated with a people, having less claims upon our respect than our ancestors have.

The course a young farmer desiring to get a good stock should pursue is to inquire first at home into the character of his climate, the quality of his soil, and the extent and quality of the sustenance which he will be able to supply—Then the next inquiry should be into the properties and qualities of the different varieties of improved stock, and select such as are likely to suit him best, all circumstances considered. After selecting he should confine himself strictly to the object of his choice. It is no way desirable that a beginner shall import stock, or purchase here the highest priced of pure blood—unless it be the blood horse, then he cannot *begin* too high.

It is a great mistake to suppose that animals of the same breed and reared in the same manner are better in England than they are in this country: the reverse, I verily believe, to be the case, having all the choice varieties of England now in the country. A man may buy in this country the best of pure bloods, selected by his own eyes, for less money than he will be required to pay for inferior animals of the same race if he import them from Europe. No man can therefore import stock advantageously or profitably from abroad, unless he has been breeding the same race of animals at home for many years, and requires a new cross from a distant family; and then his selection should be well made from the flocks of the best breeders, regardless of cost—such men only ought to import, and such only can do it advantageously and profitably to themselves.

Our state I have before said is happily circumstanced and located as a breeding state for every variety of stock, not only for our own, but for the purposes also of other states, and not doubting that the efforts so successfully already begun will be continued, I must beg to be permitted to warn the members of our society against mixing together in breeding the different varieties of the same species of animals.

Keep them entirely distinct, and bring in your crosses from distant families of the same race, and do not give them even one cross of another breed unless you have a definite object; some specific point of form or quality which you wish to correct or improve, and then you must be sure that you do not introduce at the same time another defective point, and pursue the object with undeviating steadiness. If you do not upon trial like the race you have adopted, change it and get another, but do not jumble them up together, for it is wholly inconsistent with, and contrary to the true principles of breeding; and will not fail to land you in the cheerless position of disappointment and disgust. The first cross between different races will sometimes give you fine animals for the butcher, and may prove some deficient point, but the next admixture if you do not take care will leave you with nothing which you can call by any other name than mere sheep or cattle. Like poor land made rich without changing its constituent parts, ever struggling to get back to poverty; so live stock bred from a jumble of different breeds are perpetually inclined to breed back to their original races, under deteriorating circumstances. Occasionally you may get what naturalists term an *accidental variety*, but when you do get an animal of this description which you may desire to perpetuate, the experiment is a dangerous one, and to transmit its *good* qualities requires no ordinary degree of judgment and intelligence, and also indomitable perseverance.

AN ESSAY ON THE IMPORTANCE OF LIME IN SOILS.—NO. I.

By Darius Lapham, Civil Engineer.

From the Western Farmer and Gardener.

The farm on which my father resides, in Champaign county, in this state, lies in one of those beautiful glades branching off northwardly from the main valley of King's creek, a large tributary of Mad river. We came into possession of a part of the present farm in 1830. Previous to that time, this part had been "cropped" for many years with corn, wheat, &c., without any regard to a rotation of crops, or the addition of manure, until the soil had become almost exhausted, or worn out, by this constant drain upon its resources. Since it has been in our possession it has been divided into rectangular fields, of nearly equal area, and the "four crop" system of rotation has been pursued in the cultivation throughout, until each field has had at least one crop of clover ploughed into the soil, and several of them have received two crops of clover. Very little stable manure has been used; but whatever else the farm afforded, such as refuse straw, cornstalks, weeds, &c., have been added to the soil as manure. Some few experiments have been made with gypsum, and also with leached ashes, but to no great extent—sufficient, however, to show the benefit which clover derives from the application of these substances. The experiment was likewise made of the application of gypsum to Indian corn, by putting a small quantity in each hill at the time of planting, without producing any sensible effect on the corn;—but two years afterwards, when the same field had been laid down in clover, the places where the gypsum had been applied to the corn, became very conspicuous by the greater luxuriance and increased height of the clover at those places.

Although by this system of management there has been an evident improvement in the fertility of the soil, on this part of the farm, since we have occupied it, still it cannot be called fertile, as it will not raise good wheat, and corn crops are below an average both in quantity and quality. Oats and barley seem to do better than corn or wheat; but it is necessary that the soil should

be rendered still more productive, before we can expect to realize much profit from it. Despairing therefore of restoring fertility by the means heretofore pursued, it has been an object of constant inquiry and research with me to ascertain the best mode of increasing the productiveness and fertility of this part of the farm. The first step in the improvement of any soil, is to obtain an accurate analysis of its component ingredients. Accordingly I sent a specimen of the soil, taken from the middle of a cultivated field, to my friend, Dr. J. L. Riddell, whilst he was employed in making a geological survey of the north-western part of the state; and by a careful analysis he found that one hundred grains contained the following substances:

Water, - - - -	6 grains.
Organic matter, - -	3 "
Silicious " - - -	80 "
Aluminous " - - -	8 "
Per-oxyde of iron, - -	3 "
Total,	100 "

He likewise observes, that *lime* could not be detected in this soil; and the amount of saline matters was inappreciably small. He further states that the soil seems to be a sediment from turbid water. It has usually a dark brown, or reddish brown color, consists of rather fine particles, and exhibits to the naked eye numberless glimmering grains of sand.*

Having procured the foregoing analysis, the next step in this inquiry was to ascertain which of the component parts of the soil required to be increased or diminished, or whether any other substances were required to be added in order to increase the fertility of the soil. The prosecution of this inquiry led me into the extensive and almost inexhaustible subject of agricultural chemistry; and the pages of Davy, Chaptal, Ruffin, and Professors Hitchcock, Dana, Jackson, Liebig, and several others, have been consulted during my investigations.

All fertile soils throughout the known world, are composed essentially of the following ingredients:—

Water, by absorption.

Humus, decomposed animal and vegetable matter.

Silicious matter, or sand.

Aluminous matter, or clay.

Calcareous matter, or lime.

Magnesia, manganese, and oxyde of iron, are likewise frequently found in soils; but they are not deemed essential to fertility; and in certain states of combination with other substances may be either injurious or beneficial to the growth of plants.

The greatest degree of fertility which it is possible for any soil to attain, may be produced by a proper admixture in certain proportions, of the five substances above named; but the proportions of the various ingredients may be infinitely varied, (avoiding extremes in any one substance,) and still the soil may be deemed fertile; but, nevertheless, there is a limit beyond which the fertility of a soil cannot be carried. What the exact proportions are, and what degree of admixture and combination of the particles are requisite, to obtain the greatest productiveness, has never yet been precisely ascertained; and in order to form some idea of this point, it is useful to have recourse to the analysis of soils of acknowledged fertility and productiveness.

Professor Charles T. Jackson, in his Report on the geological survey of Rhode Island, has given the analysis of ninety-four different cultivated soils, taken from various localities in nearly all parts of the state, and in eighty-nine of them, *lime* was present as one of the ingredients. Selecting, promiscuously, the results of ten different cultivated soils, from the tables in the geological report, and making an average, we find that the proportions of the five essential ingredients composing the soils, are in one hundred grains, as follows:

Water, - - - - -	2.0 grains.
Humus, - - - - -	5.0 "
Silicious matter, (soluble,) -	3.5 "
Silicious " (insoluble,) -	85.0 "
Aluminous " and iron, - -	3.5 "
Calcareous " (salts of lime,) -	1.0 "
Total,	100.0 "

A cultivated alluvial soil, taken from the banks of the Mississippi, 100 miles above New Orleans, gave the following results by analysis of 100 grains:

Water, - - - - -	3.9 grains.
Humus, - - - - -	3.6 "
Silicious matter, - - - -	81.4 "
Aluminous matter and iron, -	7.0 "
Calcareous " (salts of lime,) -	2.8 "
Total,	98.7 "

The analysis of one hundred grains of dried soil from the banks of the Nile in Egypt, a soil celebrated from the remotest antiquity for its luxuriant vegetation, afforded the following results:

Water, - - - - -	0.00
Humus, - - - - -	6.90
Silicious matter, - - -	47.39
Aluminous " - - - -	32.10
Calcareous " - - - -	2.02
Iron - - - - -	11.20
Total,	99.61

The following is an analysis of a very rich soil from Batavia. The analysis was made by Mr. Henry Sumner, of Boston, under the direction of Prof. Jackson. 100 grains of this soil yielded,

Water of absorption, - -	7.8 grains.
Humus, - - - - -	24.9 "
Silicious matter, - - -	43.0 "
Aluminous " - - - -	14.8 "
Calcareous " (phos. and crenate of lime,) - - - - -	2.0 "
Per-oxyde of iron, - - -	7.9 "
Magnesia, - - - -	0.3 "
Total,	100.7 "

The foregoing analysis of some of the most fertile soils of the world, will serve to instruct us as to the nature and amount of different matters that ought to be introduced into a given soil, in order to render it more fertile. It is not expected that this will be done at a single operation; but it is important that we should know the proper

* See Riddell's Geological Rep. to the Gen. Assembly of Ohio.

course of improvements, and then we can gradually effect them, according to our means.*

By making a comparison between the results of the foregoing analyses of cultivated soils remarkable for their great fertility, and the constituent parts of our soil in Champaign county, we at once discover a striking difference in the *total absence of lime* in our soil, as well as a deficiency in the proportion of humus, or organic matter. The sum of the silicious and aluminous matters n each being very nearly the same. It is, therefore, highly probable that an artificial addition of the requisite proportion of lime and organic matter to our soil will restore its fertility, and render it equal to the general average of the soils above noted. But there are other considerations which render it still more probable that the deficiency of lime and organic matter is the principal, if not the sole cause of the unproductiveness of our soil. These considerations I shall proceed to notice.

If there is any one principle settled in agriculture, it is that some *convertible salt of lime* is essential to the fertility of soils, and that certain crops cannot be raised upon a soil destitute of lime. When we consider the most favored grain regions of the earth, it cannot fail to be remarked, that the soils are invariably charged with a notable proportion of lime. On the other hand, we note that where the soil is deficient in this respect, such crops are invariably meager, blighted and unprofitable. A soil destitute of lime may produce straw, but it never can yield grain!

It is an important question, at present much discussed, whether salts of lime are essential to the nourishment of certain cereal grains, and whether the amount of calcareous matter is diminished in a soil by raising upon it successive crops. It is evident, *since all vegetables contain lime* in their constitution, that if they are raised on and removed from the soil after their growth, a certain proportion of *the salts of lime* must be abstracted. No one, I presume, will in modern times, contend that plants create any elementary substance. If they contain lime they must have drawn it from the soil, or from the manures that have been spread upon it.

One hundred grains of the ashes of the grain of wheat were analyzed by Sir H. Davy, and he obtained 44.5 *per cent. of the earthy phosphates*, chiefly *phosphate of lime*. The ashes of the straw of wheat contain *six per cent. of the phosphate, and one per cent. of the carbonate of lime;* Indian corn contains the *phosphate of lime*, its ashes yielding no less than thirty-six per cent. Clover contains the *sulphate of lime;* and *nearly all the plants known yield a small proportion of calcareous matter.*†

It is therefore proven beyond all doubt, *that lime in some of its various forms is an essential ingredient in all fertile soils; first*, from the fact that it is almost universally present in the most productive soils throughout the world;—*second*, from the fact that all known plants contain more or less calcareous matter in some form as an essential constituent.

It is likewise proven that lime, in some of its forms, must be continually abstracted from the soil, by the constant growth and removal of those plants which contain in their constitution any notable proportion of the salts of lime; and hence it may be inferred, that by constant cropping, the lime contained in the soil will in time become exhausted; and unless it be again added artificially to the soil, it will become incapable of producing those plants which contain any considerable proportion of lime. This fact is likewise proven by universal experience, in the cultivation of wheat, Indian corn, clover, and other plants containing in their constitution lime in large proportions.

Until very recently, it had not been suspected that any soil was wholly destitute of calcareous matter; and more especially soils resting immediately upon limestone formations. Indeed, most of the writers on agricultural chemistry, by the manner in which they have treated of soils, and their constituent parts, would induce their readers to infer the general presence, in very large proportions, of this ingredient, *in all soils*. Mr. Edmund Ruffin, of Virginia, was perhaps the first to discover the general absence of this substance in all soils which are naturally unproductive. He states that in 1817, when first attempting to analyze soils, it was with surprise and some degree of distrust, that he found *most specimens destitute of calcareous earth*. And after repeated trials, made with great care and accuracy, he concludes that no naturally poor soil (below the falls of the rivers in Lower Virginia,) *contains the smallest proportion of carbonate of lime*. After having made extensive experiments on both rich and poor soils, from various parts of the country, Mr. Ruffin arrives at the following conclusions:

"That all calcareous soils are naturally fertile and durable in a very high degree."—And,

"That all soils, naturally poor, are entirely destitute of calcareous earth."

It, then, can scarcely be denied (continues Mr. Ruffin,) that calcareous earth must be the cause of fertility of the one class of soils, and the want of it produces the poverty of the other. Qualities that always thus accompany each other cannot be otherwise than *cause* and *effect*.*

But however deficient the soils in some parts of Virginia may be in calcareous matter, many persons will be surprised to learn, *that a large proportion of the soils of Ohio are likewise destitute of this essential ingredient.*

In the second Geological Report of Ohio, Dr. Locke states that the soil formed by the disintegration of the under-lying limestone formations, in the south-western parts of the state, *does not contain at the surface so much lime as we should anticipate;* and *rarely* if *ever*, where undisturbed, does it *effervesce or foam with acids*. On the tops of the hills around Cincinnati, the *loam* lies seven to nine feet deep, before any stone are mingled with it, *and this loam is not effervescent with acids.*

The vegetable acids, (observes Dr. Locke,) which exist in the natural juices of plants, become saturated with lime as they pass through it, and form soluble salts, which are washed away by the rains. These causes, operating for ages, have evidently leached the surface, especially on the table lands, till, in my opinion, *there is an ab-*

* Jackson's Report.

† Jackson's Report on Rhode Island.

* Ruffin's Essay.

solute want of calcareous matter. If this is the fact, the clay-marl, found every where between the layers of rocks, would be a beneficial manure; and burnt slaked lime would be still more useful, and would undoubtedly renovate the wheat and grass lands, *which, on the table lands, are to some extent worn out.*

In a previous Geological Report of Ohio, Dr. Riddell says, the bottom lands near the mouth of the Big Miami, are in some places *destitute of carbonate of lime.* The diluvial soils of the extensive plains of Champaign and Logan counties, as I learned from frequently repeated experiments, *are usually destitute of carbonate of lime.* I have often noticed, by repeated observation, while travelling north in Ohio, that the inner tracts of all large plains, whether the margins are bounded by hills of limestone or not, present a soil *in which carbonate of lime cannot be detected.* Between Clarksville and Springfield, the soil does not often contain any *appreciable amount of carbonate of lime.* Near Upper Sandusky I tried with acids, portions of the upland soil from several places, *but no carbonate of lime was indicated.* Neither would the *black mould effervesce,* when submitted to the same experiment. The soil about Monroe, in Huron county, *does not effervesce with acids*; and would probably admit of improvement by the application of calcareous matter.*

Farmers' of the west! We beg of you to reflect upon these facts. Is it *true,* that your soils contain little or no lime or calcareous earth? A fip's worth of nitric acid, poured upon the soil, will inform you. Is it also *true,* that the presence of lime, in some of its forms, is *essential* to the proper growth and perfection of nearly every vegetable known, and more especially of those that are cultivated and used as food for man and animals? If you should not be convinced of this fact, from the brief considerations above given, read the invaluable works of Davy, Chaptal, and many others, on agricultural chemistry, And should you succeed in convincing yourselves of these important truths as I have done, you will naturally inquire, what is to be done to remedy this defect in our soils. In the next number, I propose to aid you in your researches for the proper remedy, as well as to offer some further and more important facts and reasons upon the *necessity* of the application of calcareous earth to poor and exhausted soils.

ADDRESS TO THE AGRICULTURAL SOCIETY OF CUMBERLAND, BY THE PRESIDENT, W. S. MORTON, DELIVERED 8TH OCTOBER, 1841.

Published by order of the Society.

Gentlemen:—In previous addresses I have attempted to give you my views of the improvement of land, and the modes by which it may best be effected, of the importance of raising stock, and especially of attending, most particularly, to their pedigree, to their comfort generally, especially as regards shelter from bad weather, and providing them bountiful supplies of food adapted to their necessities, during the various seasons of the year. I have also made some remarks on the rotation of crops and the culture of some of their varieties. It has been your pleasure to retain me in the office which now renders it my duty to address you, notwithstanding my urgent solicitations to be excused, and sincere desire to see it filled by some other individual, and my convictions of the propriety of rotation in office. I confess that the choice of a subject, for occasions like this, is becoming with me a matter of some difficulty. I have thought it might not be incompatible with the objects of our institution, or disagreeable to you, were I to withdraw from the mere machinery of our noble science, and make some remarks, at this time, on what I would call *the morals of agriculture.*

It has pleased a beneficent Providence to conduct us through another agricultural year, in the enjoyment of blessings which none other than he can bestow. In casting our views around, we find abundant cause for thankfulness, that "our lot has been cast in pleasant places," and that "truly we have a goodly heritage." Our causes for gratitude are indeed great, and they are numerous. We have civil, religious and physical privileges, which are our boast throughout the world. Our climate is uncommonly salubrious, our soils freely productive, and capable of high improvement. In recounting the blessings poured out on us by a kind Providence, well may we exclaim with the Psalmist, "He hath not so dealt with any nation."

But amidst all our civil and natural advantages, we are obliged to see and to confess much that is wrong. Man is perhaps most restless, and most prone to err, when most blessed. Boasting himself to be the lord of God's heritage, he is answerable for all the error and all the wrong in its management. Doomed by his Maker, soon after his creation, to eat his bread in the sweat of his face, he has ever since been exerting himself in unavailing efforts, to liberate himself from the literal fulfilment of his curse. But in proportion to the breach of this law of his nature, so does he invariably fail of success, in the issue of his labors. We generally are able to trace the cause of our failures to ourselves, and to recollect that the means of success were in our power, but for want of attention or of exertion were not applied. Knowledge unemployed is *not* power—time misspent is *not* money.

It is lamentable to observe the many and diversified subterfuges, to which multitudes in our country resort, in order to escape the endurance of this ancient curse upon our race. Many remove to the fertile wilds of the west, merely to escape from labor. These, like their ancient prototypes among the children of Israel, are prone to regret the flesh-pots left behind, before they pass through the wilderness to the promised land. Many, almost as quick as thought, turn merchants, vainly dreaming that the very name of *merchant* will make them rich. We all know how speedily men who get to be merchants, without the requisite mental and moral training, become *broken ones.* Indeed, these are becoming so numerous, as a class, and public sentiment so charitable towards them, that it is a matter of some doubt, whether such retired gentlemen do not thus fix their *caste,* and establish themselves in a higher order of *gentility,* than, with their feeble energies, they possibly could have done in any other way. By this remark, far be it from

* See Riddell's Geological Report.

me to design the slightest imputation on the accomplished, the meritorious, but unfortunate merchant, who, in these untoward times, has lost his all.

What were formerly called the *learned* and *liberal* professions ingulf multitudes in profound oblivion, who, like the foregoing class, have vainly imagined that a name or a license, conferred by persons in authority, would make their fortunes. These persons serve only to degrade their professions, and to destroy public confidence in the few of their brethren who have the talent and learning to comprehend, and the conscientious integrity honestly to discharge, the duties of their calling. Even the sacred functions of the clerical office are sometimes rudely seized by unhallowed hands, which have proved recreant to the handles of the plough, and from no better motive, than that they imagined the labors of the pulpit to be less irksome. Far be it from me, again I say, to speak, or even to think unkindly, of the amiable, the modest, the excellent young men, who, from mistaking their calling, or, from some other unforeseen impediment, fail of success. My remarks are designed for those who have failed from sheer hatred of labor.

Many other instances might be pointed out, of persons who have avoided the pursuits of agriculture, from the vain hope of averting that doom, which requires of man, that "in the sweat of his face he should eat his bread." These might be drawn, from high officers, who gormandize on the stores of government, and the whole tribe of vermin, who nibble in the public crib, down to the miserable vagabond, who skulks from house to house, like a stray dog, sponging daily subsistence from the reluctant charity of his neighbors.

But even the class devoted to agriculture is, by no means, exempt from the fear of labor. The truth of this proposition is so manifest, that it is somewhat difficult to decide, where we should begin with its proof. Who has not heard many of this class lamenting their lot, as hard, and wishing it had been cast in some other occupation? Let us suppose a traveller passing among us, whose design is honestly to learn the present condition, and future prospects of our agriculture. In the first place, perhaps he would be struck with the perishable nature and imperfect structure of our fences, and their unfitness, in many cases, for the protection of our crops. On inquiring for the reason of this, he might learn that there is some excuse for it in the fact that our law renders it necessary that every man should barricade his crops against destruction from the cattle of other people, instead of requiring the owners of animals to prevent their trespassing on the crops of neighbors. But still, he might wonder what other reason, beside the *trouble* of it, could prevent us from making this protection a better one. And he would suspect there must be some *hard thoughts*, if not *hard words*, among neighbors. He would also find, in this neighborhood at least, a great many gates, and the most of them in such bad order, as to cost *honest* people much trouble in shutting them. He would observe, that the plan long since antiquated in England and Scotland, of *in-field* and *out-field*, is still generally kept up. The out-fields in which the growth of corn and oats is *attempted*, not manured, not clovered, and almost as poor as the patches of land and fields thrown altogether out of cultivation, which produce nothing but poverty-grass, broom-straw and young pines. The in-fields, or tobacco lots, on which all, or nearly all the manure of the farm is applied, and which still generally receive not half enough, and which produce tobacco, wheat, and generally, of late, clover, serve to show what the land is capable of under complete management. On learning the reason for this arrangement, he would find, that we deal on credit—that the big bill of the merchant, or *part* of it, and many other bills have to be paid, out of the proceeds of the tobacco crop, and that were it not for this sort of compulsion, many might not manure half as much land as they do. Well might he conclude, that this *sweating* must be a terrible operation, in this land of .our's, and that whatever our former talented representative* in congress may have done, we are very far from having discovered the philosopher's stone, "pay as you go."

Let our traveller now come about the homestead, and he will find the dwelling-house, good, bad, or indifferent, as the case may be. The same may be said of the granary. The stable is apt to be *indifferent*, in many instances very bad—with a wet and filthy floor, and sometimes with mire so deep, at the door, as to require some hunger to induce a horse to encounter the entrance. Perchance, near the door, there may be piles of manure, long rinsed by the rains, not actually put there to spoil, but thrown out to prevent the horses from being half buried, on lying down. This is admitted to be an extreme case, but for its slovenliness and cruelty deserves rebuke. Imagine our traveller gazing at an animal which might have stood, in bold relief, among Pharaoh's lean kine, begrimed with filth, and covered with ice, its hollow eyes mournfully turned towards the fodder-stack, with its hinder legs almost crossed, to present the sharpest edge possible to the wind, while its fore ones are stretched, with almost dying energy, as props. Were he from Yorkshire, England, or, our own South Branch of Potomac, he might feel some doubt about the *species* of this poor beast; he would feel certain, however, from its horns, its mournful lowing, and chewing its cud—if cud it had to chew—that it belonged to the *genus* "Bos." Such a picture as this, also, is very rare, but, I think, I have seen something like it. The owner of this animal means to improve his stock when he gets ready. But what is that our stranger is inspecting so narrowly? Its face is sharp, and it is sharp all over. It looks as if it had just passed through a rolling mill. He has read of the opossum, and he would like to take a look at its pouch. It roots, however, most furiously, and if it only had ears he would suspect it must belong to the hog family. Perhaps the owner of these animals sells corn. Some few instances of such misguided, left-handed economy may be found in our country, and as no other punishment can be inflicted on them except ridicule, they should have enough of that. I am happy, gentlemen, to feel assured, that such extreme cases of mismanagement are not to be found in our vicinity, or among our members,

* John Randolph of Roanoke.

and to think that I perceive evidences of something like improvement. Let us earnestly endeavor to make these much more manifest. We have lost perhaps our best example of snug and judicious management, in every department of his business. You will readily perceive that I allude to our much valued and lamented friend, the late Edmund Eggleston. His example should long be remembered and imitated.

But let us introduce our traveller to the people. If he be fit to make observations at all, he has already observed, that success in agriculture, or indeed any thing else, depends much more upon them, as agents, than upon any thing on which they may operate.

Permit me to premise, that whatever reflections may be made, in relation to the young, arises from no unkind feeling towards them, but from a deep and mournful conviction, that their faults are produced, mainly, by errors of their parents and teachers, and errors in public sentiment.

The time was, when our boys were drilled in the rudiments of education, by sound scholars among the Episcopal clergy. Afterwards, by well qualified clergymen of other denominations.—These gentlemen rigidly inculcated on their pupils, that while they were *boys*, they certainly were not *men*, and, when necessary, they made them sensibly *feel* the truth of this. The impression was so *deep*, that even after they became men, they could hardly believe it. But, the conviction of the truth, in this instance, had a much better foundation in reality than it would, had it been assumed in advance of the fact.

In more modern times, somebody discovered that the clergy had too much important business to occupy every moment of their time, to spend any part of it in the education of youth; even before any safe and well adjusted scheme for their education could be devised.

Since this discovery, parents and teachers have got together by advertisement, and every other conceivable mode, except the right one, that of a thorough knowledge of character. These teachers have, generally, been *knowing ones* enough, to find that the best way to become popular, and to get the most scholars, was to electioneer among the boys. Since then, the boys have been *knowing ones* too, have had their day—have been men—and some of them great men at fourteen. And, now, who does not see that they, in a great measure, rule the country?

It would be needless to give a detailed account of female education, in this country, in former times. Suffice it to say, that girls learned but very little at school. They were taught to read, write and cipher a little, by a matronly lady, in the family, or at school in the neighborhood, while very young; after which their education was chiefly domestic and maternal. The best of books were put into their hands, and they acquired a taste for them, and such women as they made immeasurably greater men than he who addresses you have told the world.

Our stranger in forming acquaintances begins with the young ladies. He first sees them at church. He is struck with their mode of getting there. He has somehow learned that their mothers were not too proud to ride to church, two on a horse. But now he sees a single sylph-like being, whom he could have easily imagined to have flown there, issuing from a fine carriage, which cost her father more money than he can leave her as a legacy. He is a bachelor, and wishes to take the grand master's degree in life. He has a great horror of carriages, as their introduction brings with it all manner of luxury into a community. He begins to think this is not the country for him, but, like a prudent man, resolves to look further. Her dress, probably, cost more than her mother thus expended in five years, or her grand-mother in her life-time. He finds that they all come to church, in carriages, and that there are more of these on the ground than can be readily counted. He thinks he cannot settle in Virginia. But, the ladies are so beautiful! He must look further. On getting better acquainted, he finds that they are very accomplished in novel-reading, know something of grammar, geography, astronomy, geology, mineralogy, chemistry, in short, of almost every thing, except, perhaps, self-denial in expenditure, the source whence money comes, and the art of house-keeping. He makes his auguries of the future prospects of agriculture in our dear old dominion. "What a pity," he thinks, "that these fine girls have not been well grounded, in a thorough taste for the British classics generally, and especially such poets as Milton, Thomson, Young and Cowper!"

He turns to the boys. Many of these he might have taken for young Indians, had their skins been red, and their persons wrapped in blankets. Their hair, dressed a la mode Cherokee, hangs to their throats. Their velvet hands are covered with silk or kid gloves. Their dress, of the most costly materials, is fashioned in that style, which, but a few years ago, fixed upon the few who had the firm hardihood to assume it, the appellation of dandies. The supercilious glance and magnificent stride proclaim, more loudly than words, "who but we?" "We are the lords of creation!" And many of them carry out this sentiment; for they rule all about them. Such marvellous precocity amazes our stranger. But he perseveres in his investigations, and finds that they really *are men*, for they have their wine-parties, and card-parties, and sometimes spend more money in one of their nightly orgies, than their fathers make—as clear profit—in a whole year. And that they swear in oaths as long, and as senselessly arranged, as their own dishevelled locks. "What are their calculations?" he asks in amazement. Why, they expect, as soon as they become *legally* men, they will, by instinct, or, in some other mysterious way, be perfect prodigies, and feeling that they have, indeed, tasted of the tree of knowledge, they threaten, that if *the old man*, as the father is irreverently called, undertake to control them, they will march to Alabama or Mississippi, or be off to Texas. But how comes such deep depravity, at so early an age? It is found, oh horrid! that these parties are generally contrived by one or more older boys with the same profusion of hair on their heads, either natural or artificial, and a perfect mop of it on their faces and throats—and that all this is *their* diabolical work. Now, as to the fashion of the hair, I am not very particular, but when it becomes so perfectly the *rage*, as to give an impress to character, and exert an influence on morals, it deserves rebuke. It is true, I have

not learned that, since the days of Samson, length of hair had any connexion with strength, either of brawn or intellect, and if one does not fall into some delusion on this subject, it matters not much how he wears his hair. It would be very pleasing, however, to see our boys dressing in a style becoming the relation they sustain to society, and giving fair promise that they will prepare, in the best manner, for the high and responsible destinies which await them. They little think with what deep affection, and absorbing interest, they are regarded by their seniors and parents.

I have now, gentlemen, passed over, in a hurried manner, some of the remarks which I intended for this occasion. I designed to have said something about the condition of the poor, and their education, and the literary fund and its management. But, having neglected to prepare while leisure was allowed me, and being interrupted, in the short space which I allowed myself for preparation, I must now draw to a close, without finishing as I intended.

The picture, as far as presented, confessedly bordering on caricature, gives no bright prospect of the future condition of agriculture. The impress on the character of our youth, doubtless stamped by the wild schemes of wealth and aggrandizement, but recently indulged by their seniors, from the great expansion of credit, from magnificent speculations in the south-west, and from multicaulis—should cause us deep concern. The subject is full of pain. I may have erred, in attempting to alleviate this, by occasionally intermingling levity with my remarks. You doubtless all agree with me, in the opinion, that the prosperity of agriculture, and all the interests of our beloved country, depend more upon the character of the people, than on the physical advantages enjoyed, great as these are acknowledged to be. I intended also to present some remarks more directly applicable to ourselves, as the actors and conductors in the passing scenes of life. But time fails me. I have said enough, however, to show the awful magnitude of the subject, and its touching and intense connexton with every thing dear to our hearts.

May I, before closing, touch once more on a matter, which deeply concerns us all. The busy and malignant spirit of party seems to be diffusing gall and bitterness through almost all the ramifications of society. Not only is the ocean rolled by the high functionaries of government and distinguished leaders, but every pool is muddied, according as the petty agitator may desire to obscure his own designs of personal aggrandizement, or (as the phrase is) "manufacture capital" for his own purposes. Mighty whirlwinds are raised or a little dust kicked up, according to the protency and skill of the operator. Agitators in the north, and agitators in the south, are constructing a hedge of thorns and briers to sever our glorious union. Their occupation would perhaps be harmless, were their labors not drawn into requisition, and eagerly used, by men who *seem* to be better. Can agriculture flourish, when those, who should be its friends, are madly engaged in other things, which must tend to its ruin? I conclude, gentlemen, fervently trusting, that we will all earnestly lay these things to heart, and strive, through this society, to do much good to our country.

Note.—Having culpably procrastinated the commission of my thoughts to paper, until barely time enough remained for the purpose, and being interrupted by the necessity for an effort, which produced indisposition, I was thrown into such embarrassing hurry, as to produce confusion, in the developement of the plan proposed. I have nothing now left me, having consented to its publication, but to furnish the address, as it was delivered, for printing, appending a note, explaining the plan rather more clearly than could be drawn from the body of the address.

The leading idea was, that man, by a law of his nature, was doomed to labor. That obedience to this law generally insured him success. That disobedience or evasion of it was the usual cause of human failure. To this source may be traced the miserable condition of our agriculture, as well as of our commerce—(for it is evident, that if our products and, of course, our export staples were greater, the current of exchanges would, so far, turn in our favor.) To this source may be traced, the giddy pliability of our grown men, to be seduced into wild schemes of enrichment—and our boys, into alarming indolence, effeminacy and dissipation. The hardy sons of toil, who performed their own work, or attended to their own business, have mostly gone to the grave. Gentlemen nowadays, in moderate circumstances, who have neither public nor professional duties to perform, that they may take their own pleasure, employ what are *called* overseers. This, with most of the class, is a misnomer, for they often need more to be *overseen* than the negroes. An industrious, attentive, faithful overseer, is an honorable man, too seldom found. It is by the way becoming an object worth inquiry, where overseers are to be obtained. The sons of our worthy *two* and *three hogshead men* have, like the other boys, got to wearing broad-cloth coats, hair like Indians, and become gentlemen at fourteen. It may soon be deemed an insult to ask any man to be overseer. Most evils work their own cure. This may compel every man to be his own overseer, and thus bring good out of evil.

The subject of education and the condition of the rising generation is also one of thrilling interest. An ardent friend of the boys, I am for their own good, plotting rebellion against their government. I cannot abide the idea of an infant king. I could most cordially wish them to be laboriously preparing for the theatre of manhood, and for incomparably surpassing the deeds of their fathers. The example of Phaeton is too vividly recollected to trust them as yet with the reins. When they get ready, I shall most heartily unite in cheering them into the ranks.

For the girls, I feel the most delicate and the deepest anxiety, and am assured, that whenever their fathers and brothers shall fall into the right track, they will sweetly glide into that course to which the public welfare so loudly calls them.

The conclusion of the whole matter is, that the best agricultural periodicals may be published, the best essays may be written on the improvement of farming, the best implements of husbandry may be invented, the best races of stock introduced, philosophers may speculate, the ministers of our holy religion may preach, yet after all, appalling as the thought may be, we must WORK! Yes, we must WORK.

W. S. M.

IMPORTANT DISCOVERY IN AGRICULTURE.

From the New York Evening Post.

In the *Phalange*, a Fourier paper published at Paris, September 8th, a novel discovery is described, which if true will work a great change in an important department of agricultural labor. It is communicated to the Paris print by Chas. Poillard and M. Bernard, who date their letter at Brest, August, 1841. It appears that while they and some of their friends, who farm their own estates, were engaged in conversation on the subject of agriculture, it was observed by one of them that that branch of industry was suffering more from the want of capital and enterprise than any other, and that nothing was to be done without manure, which was every day becoming more scarce and expensive. This remark led to an inquiry into the properties of manure, and particularly as to what provision nature had made in those uncultivated regions where there seems to be a vigorous and luxuriant growth, without artificial assistance.

"In observing nature unassisted, or unthwarted rather, by the hand of man, in vegetable reproduction, it is found that when the seed is ripe it falls upon the ground, and then the plant which has produced it sheds its leaves or falls itself upon it in decay, and covers and protects it from the weather until generation has commenced, and the young plant is able to grow up in health and strength and full developement, to recommence the same routine of seeding and of reproduction.

"From this it follows that, in nature, every plant produces its own soil or *humus*, and that the earth only serves to bear the plant and not to aid or nourish it in vegetation. The nourishment of plants is thus supposed to be derived from *air* and *water*, *heat* and *light*, or electricity in different proportions, adapted to the different varieties of vegetable nature."

With this general notion in their minds, and considering wheat to be, in present circumstances, one of the most important vegetable substances, they agreed to try experiments, and in October last undertook the following operations:

In a field which had been sown with rye, because the land was deemed too poor for wheat, a plot of twelve square yards, untilled and left without manure, was carefully strewed over with the grains of wheat, and wheaten straw was laid upon it closely, and about one inch in thickness. In a garden, also, which had been neglected several years, a few square rods of earth were trodden over, and the surface being made close and hard, some grains of wheat were scattered on this hardened surface, and a layer of straw one inch in depth was carefully laid over it, and left, as in the former case, to take its chance without ulterior attention. And in order to make doubt impossible concerning the mere secondary functions of mineral earth in vegetable reproduction, twenty grains of wheat were sown upon the surface of a pane of glass, and covered with some straw alone, as in the other case.

The germination of the seed was soon apparent and most healthy in developement. "The winter has been rigorous," say these correspondents, "for this part of the country, and the earth has sometimes been frozen in one solid mass to a depth of six inches in the garden where the wheat was sown, and this has happened several times during the winter, to the great injury of many plants and even the entire destruction of some; while the spots protected by the straw were never thoroughly congealed, nor were the grains of wheat, though lying on the surface under the straw, at all affected by the cold. During the spring excessive droughts, prolonged and several times repeated, having prevented vegetation on the common plan from flourishing in healthy progress, while our little spots of wheat have hardly felt the inconvenience of excessive dryness, for the earth, protected by the straw, has never been deprived entirely of moisture, and our blades of corn were flourishing when all around was drooping and uncertain. To conclude, then, we have thoroughly succeeded in our practical experiment, and the wheat produced is of the finest quality. The straw was more than six feet high, and in the ears were 50, 60, and even 80 grains of wheat of full developement, the admiration of all who saw them, and particularly those which grew upon the pane of glass, and which were quite as healthy and as large as those which grew upon the common earth. It must be observed also that there was not the smallest particle of earth upon the glass, and that the plants were left entirely to themselves, without being watered or attended to in any way whatever from the time of sowing to the time of reaping."

The cause of this success they think may be explained in the following manner:

"Straw being a bad conductor of heat, and a good conductor of electricity, maintains the root of the plant in a medium temperature, and prevents the earth from being deprived entirely of moisture. The moisture of the earth, or the substratum, being continual, facilitates the gradual and constant absorption of carbonic acid gas from the surrounding atmosphere, and hydrogen and carbon, the chief elements of nourishment to vegetables, are thus economized in regular supplies where they are constantly required, and pass in combination with oxygen from the roots up to the stems and branches of the plants in which they are assimilated, and the oxygen throws off in exhalation from the leaves. The straw decays but slowly, and thus furnishes its substance by degrees to the young plant in due progression and proportion, (such as the siliquous ingredients, for instance, of the pod or capsule,) so that the decomposition of the straw corresponds to the four phases of fermentation in progressing from the *saccharine* to the *alcaholic*, the *acid* and the *putrid* states, analogous to those of *infancy*, *budding*, *youth*, and *seeding* of the plant.

"We observe that our blades of wheat have but a very few roots, and those are short and hard, something like a bird's claw; and this agrees with the remarks of Mons. Raspail, who states that the most healthy plants in ordinary vegetation have the least exuberance of roots and fibres.

"Another important observation also, is, that weeds, and parasitical vegetation are prevented by this method, for the straw chokes every other plant but that of its own seed. Many other interesting observations might be made on these experiments, but we refrain at present from obtruding on your readers; but if any of them wish for further information on this subject we shall will-

ingly afford them every facility. The importance of the general result will easily become apparent without further comment, and a revolution in the present modes of agricultural labor is a necessary consequence of this discovery. No tillage will now be required, nor any artificial stimulants in manure and other more or less expensive combinations with regard to soil and culture. In fact, it would be tedious to enumerate the various advantages that may result in practice from this casual experiment, and therefore we proclaim it simply to the world that all may profit by it."

As this experiment can be easily tried, we hope some of our farmers will put it to the test, and communicate the result. We shall certainly try it on a small 7 by 9 lot of ground, which is the largest that is vouchsafed to a dweller in the city.

GROWING POTATOES UNDER STRAW.

For the Farmers' Register.

Some remarks in a late number of the Farmers' Register, relative to growing potatoes under straw, induce me to make the following statement:

Many years ago, my father had a bank in his meadow (near Philadelphia) which could not be irrigated in the common way, on account of the thin, porous soil resting on a bed of loose sandstone. The water from a fine spring had been turned on, but it sunk down and disappeared. Recourse was then had to flooding. An embankment sufficient to hold all the water that could collect in twelve hours, was constructed; so that, every night and morning, a tide swept over the surface, and good crops were obtained. In process of time, however, the flood-gate ceased to perform well, and weeds of little value for hay got possession of the bank. A new plan was determined on. Late in spring, when vegetation was well advanced, we laid potatoes among the grass and weeds at proper distances, and then covered the whole with straw about a foot in thickness. The product was good, though the season was dry; the grass and weeds were smothered and destroyed; and the year after we had a fine crop of clover. D. T.

Greatfield, Cayuga co., N. Y., 11 mo. 2, 1841.

ARISTIDA OLIGANTHA. POVERTY GRASS. HEN'S NEST GRASS.

(Subject continued from p. 613.)

For the Farmers' Register.

In addition to the two species of *Aristida* described at page 613 of the current volume of the Farmers' Register, *A. oligantha* is entitled to notice as being *the* poverty grass of the district of country above tide water. Its specific characteristics are that the flowers are solitary and distant; and the awns very much elongated, and divaricate rather than contorted. It is the most conspicuous and luxuriant species of the whole genus. In the month of September it attains its full size, which is about 15 to 18 inches in height; covering whole fields of impoverished land, and, apart from the associations with which it is connected, exhibiting a pleasing and wavy appearance. It flourishes on the same soils which produce *A. dichotoma, A. gracilis, A. purpurascens, &c.*

When the seeds have become matured, they are exceedingly annoying to persons walking through patches of this grass. They insinuate themselves into one's clothes, from which they are with difficulty detached. When the plant is in flower, it has been supposed by some farmers to afford nutritious grazing to stock. It is then, at any rate, very tender and luxuriant. It is an annual, and flowers in September.

All the species of Aristida are doubtless included in the provincial name of poverty grass: for to an unpractised eye it is only by a somewhat careful examination that the specific differences are detected. And before the period of flowering, it is still more difficult to distinguish them.

The range of this species is not well defined by botanists. According to Eaton it is a *southern* plant, though it is not described in Elliott's Botany of Georgia and South Carolina. From the previous notices published in the Farmers' Register, it is probably not common in the tide water region of Virginia. In Chesterfield, Goochland, and the adjacent counties, it is by far more common than any of its congeners. T. S. P.

Chesterfield county.

GROUND OF PREFERENCE FOR DIFFERENT KINDS OF WHEAT. SURFACE MANURING.

Absence from home during the latter part of October, and continued indisposition since, have prevented our paying attention to several of the past communications at the time of their appearance, when comments would have been better timed, and perhaps more satisfactory than now. These several omissions will now be supplied.

We entirely agree with our valued correspondent, Mr. A. Nicol, in considering it an important *desideratum*, that some of our most experienced and successful wheat farmers shall present their opposite views of preference for each of sundry different kinds of wheat as the supposed best crop. And without designing to exclude, or to slight such information or opinions from any other source, we would especially request the opinions of Messrs. Hill Carter of Shirley, John A. Selden of Westover, and William B. Harrison of Brandon, because understanding that these gentlemen prefer different wheats, and because the judgment of each of them deserves high respect. We could name many others from whom opinions on this subject would be no less valued, but of whose preferences of kind nothing has been heard.

In our own general practice for more than the twenty last years, we have adhered to the "mountain purple straw wheat," and, on the whole, have preferred it to any other kind. Sundry other

kinds have been tried as part of the crop, because supposed at the time to be preferable; but each has been afterwards abandoned, and the mountain purple straw again sown exclusively. Our preference was founded on the belief that this kind, on a general average of years, was at least as productive as any, and that the grain was better able to withstand wet weather during harvest, than any white wheat, and perhaps most of the red wheats. Any *later* wheat would be more liable to be injured by rust; and any *bearded* wheat is less manageable or safe in reaping, shocking, and thrashing by machines. The grain is supposed by experienced millers to make the richest and best flour—though of course not so white, and therefore not so high-priced as the flour of the thin-skinned and more tender white wheats. These, our grounds of preference, are stated to invite correction of our judgment, and opposing views from better sources of information.

If the writer of a recent communication (signed S. at p. 628,) had been a reader of the earlier volumes of the Farmers' Register, he would have seen many confirmations of his opinion, (though still deemed in his region both novel in practice and heterodox in theory,) of the propriety of applying putrescent manures to the surface. We have for seven or eight years considered the advantage as settled by sufficient experience; and the *rationale* or theory as being perfectly satisfactory. And if it be as improving to soil or crop, or even *nearly so*, to apply manure to the surface as to plough it under, it offers a gain of 50 to 100 per cent. in the value of the general manuring operations of a farm, in the greatly increased convenience. Under the formerly supposed necessity for ploughing under manures to prevent their waste, they could be applied but at certain times, and under certain conditions of manure, and of crop. But, if it be permitted to apply to the surface, the application is not only almost always more easy and convenient, but the manure may be laid on when too coarse to be easily ploughed under, or when the state of the land or the crop would not permit ploughing. For cultivated crops, and short or partially rotted manure, we should care very little whether it were ploughed under just before planting, or given as top-dressing very soon after; and considerations of mere convenience would induce the choice of either mode. But, perhaps the very best application of coarse manure is on clover, (or other grass) not designed to be grazed, or mown. The manure gives as much and as early benefit to the clover as it could to any tillage crop; and the increased growth of the clover serves to speedily cover and shade and keep moist the manure, so as to induce its speedy rotting; and as fast as it rots, its enriching parts are taken up by the growing crop, and through its increase, the quantity of manure is multiplied for the use of the next grain crop. If pine leaves are laid over wheat after the sowing and harrowing, and before the plants come up, there is not only a slight early benefit from this coarse and poor manure, but a valuable protection from the winter cold, both to the wheat and the clover seed sown thereon. So far as this can be done, at so busy a season, it is the best mode of using the rakings of pine land. The trash might be raked up and left in heaps during the previous autumn and winter, as it rots very slowly in heaps.

The greater economy of applying the manures to the surface furnishes the explanation of *all* that is true and beneficial reported in the article at page 643, as a new and wonderful discovery made in France. We have no question that the *facts* therein stated are much exaggerated, and some of them altogether mistaken, or falsely stated. Of these, are the statement of the growth of wheat on *a pane of glass*, and without the aid of soil, and that of two inches thickness of wheat straw serving to prevent the growth of all weeds. But, rejecting such exaggerations and false statement, there is no doubt of the established truth of the general principle which is there presented as a new discovery; that is, that a covering of vegetable matter will serve well as manure, and also (if thick enough) preserve the moisture and mellowness or tilth of the soil, and smother weeds. Two inches thickness of straw could not however effect any of the latter objects.—Ed. F. R.

GREEN-SAND OF JAMES RIVER.

For the Farmers' Register.

I yesterday saw, at Evergreen, a striking proof of the beneficial effect of the application of this manure. About 10 years ago, a strip of land about 15 or 20 steps wide, running through a portion of a field quite uniform, there being no perceptible difference of soil on either side, was dressed with green-sand at the rate of about 30 bushels to the acre. The field had been previously marled, and since the marling never a bushel of putrescent manure has been applied in any shape. The green-sand was applied for experiment's sake, and, as well as the proprietor remembers, in the fall succeeding a wheat crop, on the first year's growth of clover. The land has been for several years back cultivated principally in wheat and clover. The clover seed has not been sown for several rotations, this strip is now

well set with a uniform thick and vigorous growth of young clover, while on either side, the clover is much more scattering and far inferior. The wheat stubble (wheat was cut from this field this summer) would show that the wheat in this strip was decidedly better, I may almost say 50 per cent. better without the fear of exaggeration, than outside of it. The carrot weeds stand almost twice as high as on the neighboring land, and though the vile fox-tail rears its dingy head in great profusion on either side, little or none is perceptible here. The above observation may be interesting to those owning deposites of greensand. EDMUND RUFFIN, JR.

November 4th, 1841.

AGRICULTURAL AND HORTICULTURAL SOCIETY OF HENRICO—(*2d meeting.*)

(Extracts from the proceedings.)

Report of the committee on stallions.

The committee appointed to award the premium to the stallion best suited for the get of saddle or harness horses, beg leave to report, that six were exhibited, and the committee unanimously agreed that the bay stallion Cleveland, the property of Gen. Carrington, and got by imported Cleveland out of a Roanoke mare, was entitled to the award. R. B. HAXALL, *Chairman.*

October 20th, 1841.

The award of $15 was therefore accordingly paid.

The following reports were then presented:

Report of the committee on gardens.

The committee on gardens respectfully represent, that of all the fine gardens in the vicinity of Richmond, only one has been offered for their examination, and they sincerely regret that they are compelled to decline awarding a premium to that. JOHN CARTER, *Chairman.*

Richmond, October 20, 1841.

[And accordingly no premium was awarded upon the subject of gardens.]

Report of the committee on corn.

To the Executive Committee, of the Henrico Agricultural Society:

The undersigned, a committee appointed to examine the fields of corn, of such members of the society, as might be disposed to compete for the premiums to be awarded, state, that they were requested to view the fields of the following persons, to wit:

The Rev. J. H. Turner, Messrs. G. W. Basset, Walker Tomlin, R. C. Page, Jas. Gordon, Isaac A. Goddin, Josiah Smith, John N. Shields and Sterling I. Crump. Having examined the corn fields of the gentlemen aforesaid, we now report: That it is our unanimous opinion, that Mr. W. Tomlin's is the best field of corn, Mr. S. I. Crump's the second best, Mr. I. A. Goddin's the third, and Mr. J. N. Shield's the fourth.

We deem it proper to state, that Parson Turner's corn field has been visited by a violent wind, and was very much injured, and it gives us pleasure to state, that all the corn fields, viewed by us, are considered very fine.

EDMUND CHRISTIAN,
EDWIN HILL,
WILLIAM A. GAY.

Henrico, October 20, 1841.

Whereupon the premiums were accordingly paid—viz.: $15 to Mr. Foster—$12 to Mr. Crump—$10 to Mr. Goddin—and $8 to Mr. J. N. Shields.

Report of the committee on roots, &c.

To the Executive Committee of the Henrico Agricultural and Horticultural Society:

Your committee to award the premiums on roots, &c., here beg leave to state, that they have viewed the crops of every individual who has expressed a wish to compete for the premiums, (at least so far as has come to their knowledge,) and report as follows:

That the crops of turnips that came under their observation, were those of Messrs. Francis Staples, Thos. S. Dicken, Joseph Rennie, William H. Richardson, and New and Hydecker; and they give it, as their decided opinion, that Francis Staples, esq., is justly entitled, to premium No. 1; General William H. Richardson, to premium No. 2; and Thomas S. Dickin, esq., to premium No. 3. The crops, taking the premiums, were really very fine, (being the ruta baga turnip,) and so were the others of their kind very good, being the red top and white Norfolk.

Your committee farther report, that their attention has been drawn to but one crop of beets, which crop, in their estimation, was, in every respect, richly deserving of a premium—having obtained an immense size, notwithstanding the ravages of its enemy was marked heavily upon them—premium No. 1, on that crop, they award to Rev. Jesse H. Turner.

Your committee have farther to state, that they have been called upon to notice the potato crop of Messrs. John Carter, Isaac A. Goddin, Edwin Hill, Thos. S. Dickin, James Gordon, and William H. Richardson; and, after the most critical examination in their power, by digging in various places, (for they were mostly in the ground,) they decide that, in their judgment, John Carter, esq., is entitled to premium No. 1, on that crop; and General William H. Richardson, to premium No. 2. Of this crop, your committee would observe, that the yield appears to them to be ordinary, both as it regards size and quantity.

On the cabbage crop, your committee regret to say, that they cannot award either of the premiums, as offered by you on that crop, to any person. The prospect of Messrs. New and Hydecker, for a large and fine crop was very flattering, until the worm attacked them, which almost totally destroyed them.

On the pumpkin crop, your committee would report, that they were highly gratified with the exhibit made by Messrs. Robinson and Turner, their eyes having never before beheld a heavier and more abundant crop than that of Mr. Robinson, throughout his entire field. Your committee think they would hazard little in saying, that the pumpkins in the cornfield, is fully equal to one-third of that of the corn crop, which certainly does Mr. Robinson great credit, being a very

fine one. Your committee therefore, with pleasure, award to Anthony Robinson, esq., premium No. 1, and to Rev. Jesse H. Turner, premium No. 2. ROBERT CARTER PAGE, *Chairman.*
Richmond, Oct. 20th, 1841.

The premiums were awarded and paid accordingly, viz: for turnips, $8 to Mr. Staples, $6 to Mr. Richardson, $4 to Mr. Dickin; for beets, $8 to Mr. Turner; for potatoes, $6 to Mr. Carter; and $5 to Mr. Richardson; and for pumpkins, $6 to Mr. Robinson, and $4 to Mr. Turner.

The 2d premium for beets, equal to $6, was awarded to Mr. Ed. Hill, on the following certificate.

At the request of Mr. Edward Hill of King William, I have this day laid off half an acre of his lot, (of 3 to 4 acres,) now in beets, a part of which I saw pulled up; and having taken the tops off, weighed them, and find the product to be on the half acre, 16,044 pounds, or 32,088 pounds to the acre, equal to 534¾ bushels (of 60 pounds to the bushel) to the acre. Given under my hand this 18th day of October, 1841.

JOHN LUMPKIN.

Gen. Wm. H. Richardson, from the select committee, presented the following interesting report, on the best cultivated farms:

Report of the committee on farms.

Wm. H. Richardson, Warner W. Gay, and Francis Staples, *Committee.*

This committee having discharged the duties assigned them, respectfully offer the following report:

The first farm visited by them was that of the Rev. Jesse H. Turner, president of the society, who handed us a written statement, which we here insert:

"To the committee appointed to inspect farms, and to award premiums on the same.

"Gentlemen: I offer my farm for the premium. You will of course inspect the premises, and judge for yourselves. But it has occurred to me, that it will aid you in your arduous duty, if I, as the proprietor, state some of the leading facts pertaining to the same.

"My operations as a farmer began in the year 1827. In that year I bought 30 acres of very poor and even exhausted land, intending at that time never to own another foot of land. But, after improving the above piece, I became interested in farming; and by additions time after time, generally of other small pieces of similar poor land, my farm now consists of 192 acres. Of this about 180 acres are cleared. My object and effort has been to improve my land, and get it in cultivation as fast as I cleared it; but in this I have failed by about 20 acres of low and very wet land. I now have about 160 acres in actual cultivation, all of which has been improved, and most of it highly.

"In improving my lands, I have used lime to a small extent; but my main dependence has been putrescent manures. At first I applied about 50 cart-loads to the acre; I now put on about half that quantity. I always apply it broadcast, and I greatly prefer that this should be as a top-dressing to the grass lands.

"My crops from the beginning have been grass, corn and oats, to which I have recently added beets and turnips. About half of the cultivated land (say 80 acres) is in grass of some kind, mostly clover, timothy and herds grass, of which the usual product is somewhere about 3,000 pounds to the acre. The balance is one-half in corn; the other in oats. The usual product of corn is about 8 barrels to the acre, and of oats about 3,000 pounds. This year the product of the latter has been much less.

"My preparations for taking care of my crops are ample, so much so, that no part of them, not even the corn tops, or shucks, are exposed to the weather; but all are put under shelter. In this I find great convenience, both in putting away, and in taking out for use.

"The force employed on my farm consists of five regular hands. Besides these I have a sixth, but he is employed almost exclusively with the wagon, or in the garden. I also hire labor to the amount of about four additional hands, during harvest.

"My stock consists of three horses, six mules, four work steers, three milch cows, a bull, and four other young cattle. Of hogs, I have a considerable number; but not having taken a census of them lately, I cannot, at present, state how many. Of the condition of my stock, and of the provisions made for their comfortable accommodation, the committee will judge for themselves. I will just add, that I am still manuring with all my might. For this purpose, I resort to my farm pen, my stables, my hog pens and cattle shelters. All these I endeavor to keep well littered. How much manure I get from these sources, I cannot state precisely, but it is very considerable. Last year I tasked myself with the manuring of 10 acres from my home resources. I more than did it. This year I have given myself a task of twenty acres, and I think I shall do it. Besides this, I haul a large quantity of manure or coal ashes from town, so that, with the whole, I usually manure from forty to fifty acres during the year. Under this system, my lands so far from deteriorating, are perceptibly improving. I greatly need an additional force to cultivate them. The inclosures, and indeed the general condition of the farm, and all its appurtenances, are submitted to the inspection of the committee. J. H. TURNER."

To this we add, that Mr. Turner's farm, as might be expected, is in a very high state of productiveness; it lies in the immediate neighborhood of the city of Richmond, the nearest point being little more than one mile, and the most distant, scarcely more than two from the town. This has afforded the proprietor great advantages in obtaining manure, to which object, from the first, he seems to have devoted his ample pecuniary resources, with great sagacity and energy —insomuch that according to his estimate, not less than 150 two horse cart-loads of manure, has been applied to every acre in cultivation.

Buildings.—A very handsome and well arranged family mansion with all the requisite offices for convenience and comfort, all in the best order. Comfortable houses for domestic servants and farm laborers. Stable pretty good. Hog sties—two ranges containing 22 pens partly roofed, erected during the last winter and spring. Cattle sheds are now building, and will be completed in a short time. Three large houses con-

structed for the purpose and capable of containing we suppose 4 to 500,000 weight of hay.

A very good garden.

Crops—Detail given in Mr. Turner's statement, to which we add, that the beet crop is superior to any. The turnip crop, though good, inferior to some we have seen.

Cultivation—Of the corn crop appears to have been defective, but that crop is a good one, and has growing with it a good crop of pumpkins. Other crops and garden in good order.

Stock—Horses and mules good. Cattle ordinary.

Hogs—Two boars and three brood sows with two litters of pigs, all of the Berkshire stock and superior animals, obtained at great expense from Mr. Allen's celebrated stock at Buffalo, with the exception of the premium boar President, which was purchased of Mr. A. B. Shelton. For one of the sows 12 months old Mr. Turner paid $100. A large stock of other hogs, very good.

Fences—Chiefly of plank, with some thorn hedge—the former, as we think, not sufficient for complete security.

Keeps farm accounts—Agricultural papers taken—Farmers' Register, Cultivator and Southern planter.

Farm of Ro. Carter Page.

287 acres--200 of which is in cultivation—the rest in fine forest. Much of this farm is rich, having been heavily manured by Mr. Shepherd, of whom Mr. Page purchased it, and the improvement continued for some time by Mr. Page —but the whole is susceptible of the highest improvement.

Buildings—A spacious and convenient mansion of brick, with all necessary offices, including comfortable accommodations for laborers, a fine barn and stables, good corn-house, with stables for cattle underneath—Fences good.

Crops—Corn, oats, tobacco, turnips.

Cultivation of the corn crop very good, though much of the fodder will be lost, from the necessity of attending to the tobacco, which Mr. Page cultivates this year for the first time. Turnip crop ordinary. Tobacco—A large portion has already been cut; that which is now standing, shows that the crop was luxuriant; but it seems to have sustained much injury from worms. Garden appears to have been well cultivated during the earlier part of the year, but latterly neglected —the tobacco crop engrossing most of the farm labor.

Stock—Four work horses, two carriage horses, two saddle horses, and a very fine horse colt of the Canadian stock. Cattle—six milch cows, good—three oxen not seen by the committee. Hogs—a large stock, including a Berkshire boar and sow—the latter a fine animal.

Labor—Six men and one boy.

Keeps farm accounts.

Agricultural papers taken—*Cultivator and Southern Planter.*

Farm of James Gordon.

35¼ acres, 17 of which are cleared and in cultivation.

Buildings—A neat and convenient dwelling, good kitchen, corn-house.

Stable—An excellent cow-house, with loft above it for forage.

Fences—Chiefly of plank, and very good.

Crops—Corn, oats, hay, pumpkins, cucumbers, &c., for market as pickles. Good garden.

Cultivation—Of the crops that we saw, very good.

Labor—None but his own.

Family of six white persons—hires a woman this year.

Stock—One good work horse, 2 milch cows and a heifer—sells butter at a good price.

13 hogs, which will afford him a sufficient supply of pork for his family.

One breeding sow and 5 pigs improved stock.

Means in progress for raising manure very good, and we were pleased to observe the attention Mr. Gordon is now paying to that important branch of husbandry.

Mr. G. takes no agricultural papers and keeps no farm accounts. He cannot, therefore, say precisely what is the clear profit on his farm; but the entire support of his family is derived from it, leaving him over and above all expenses more than $100 annually to lay up.

Here is an extraordinary instance (in our state at least) of what the steady industry of one man may effect. The committee as yet have met with nothing equal to it, and they are satisfied that Mr. Gordon has rather underrated his clear profits. It is evident, however, that he would have been much aided by the experience and practice of others, as we find detailed in our agricultural journals, and we accordingly recommend to him to secure such aid without further delay.

Farm of Thomas S. Dickin.

163¼ acres, about 100 cleared and in cultivation, balance in wood.

Buildings—A comfortable dwelling, good kitchen and lodging room for laborers, dairy, poultry house, barn, a large stable with spacious loft for forage, shed adjacent for wagon, cart, and for work in bad weather, a large and excellent cow-house with hay-loft above, good corn-house, with shed for tools and agricultural implements, "A place for every thing and every thing in its place," good garden, good fences.

Crops—Corn with pumpkins, oats, clover, hay, Irish and sweet potatoes, turnips, ruta baga and white Norfolk; all the crops on the ground fine.

Cultivation—Excellent. This farm is generally in good condition and in a state of steadily progressive improvement, fully commensurate with the means of the proprietor; plots of grass well set, wherever the land is suitable.

Manure—A large supply raised on the farm. Stables and cattle-yards well littered. Supplies occasionally obtained from Richmond in exchange for wood. Of this compost for top-dressing is prepared.

Labor—One young man and 2 elderly men; one of the latter hired.

Stock—4 horses and a colt, 4 milch cows, all in fine condition, 4 sheep, 40 hogs of all sizes, including 2 superior brood sows with litters of the finest half Berkshire pigs the committee has seen. Raises an ample supply of pork; has sold this year pigs to the amount of $82.75.

Takes the *Cultivator* and *Southern Planter.*

Kept regular farm accounts until the last year,

when, and during the present, the practice has been interrupted by ill health. Cannot, therefore, state profits at this time over and above the maintenance of his family of 8 white persons, which is derived solely from his farm. The profits have latterly been much reduced by the low price of produce. But he has annually a surplus of corn, oats, hay, potatoes and turnips for market, beside the produce of the dairy, which is conducted by his daughters, and is sufficient for their expenses. Has purchased in the last 10 years, and paid for from it, 100 acres of his farm and 1 negro man, besides repairing and adding to his dwelling and building, stable, cow-house, corn-house and sheds.

Farm of Edwin Hill.

The committee not finding Mr. Hill at home did not make a minute or particular examination of his farm. He has lately purchased it, and this is his first year's cropping. We noticed fine crops of corn, tobacco, potatoes, with some good beets and turnips, also a good garden, and generally an aspect of neatness and order which indicate the good farmer and manager. This farm is evidently improving under good management.

Farm of Wm. Miller.

210 acres, 80 in cultivation.

Buildings—a good brick dwelling, kitchen and laborers' houses of wood.

Good garden—good barn and stables.

Cultivation—We noticed here the finest crop of tobacco we have seen, especially a piece of probably one acre, which has been cultivated by Mrs. Miller, with her domestic servants. So very superior is this portion of the crop, that the committee are satisfied it can scarcely be surpassed on the finest tobacco land; and, as it is now understood, that the committee on this crop has not acted, this committee, although it is not within their prescribed duty, unanimously recommends, that the premium offered upon tobacco be awarded to Mrs. Miller.

Crops—Corn, oats, tobacco—Corn crop pretty good—Tobacco, as already stated, very fine—Some good clover, and the farm is in an improving condition, though not so rapidly as, considering its vicinity to the town, it might be; means in progress for making manure on the farm good. The tobacco here, as in other places, seems to have absorbed a large portion of the farm labor; but that crop has been admirably managed.

Labor—Five men and one woman.

Stock—Four horses, six head of cattle—including three milch cows; hogs.

Keeps no farm accounts, and takes no agricultural papers. This farm not entered for premium.

Farm of Anthony Robinson, Jr.

When the committee came to inspect this beautiful and highly improved farm, they did not find the proprietor at home, and consequently had not the advantage of a detailed account of his farming operations. Mr. Robinson is justly considered one of our best farmers, and we were much disappointed at not meeting with him—but we were received and conducted over the farm by his faithful servant and foreman Charles, whose attachment to his master, zeal in his service, and honest pride, were manifested in a manner exceedingly gratifying to the committee.

The following is the result of our examination:

Buildings—A neat and convenient family residence, with all requisite offices for complete comfort—including good quarters for laborers and domestic servants. Barn, stables, carriage house, cattle sheds, several hog sties, hay house, all in good order.

Excellent arrangements for saving manure, of which a large supply seems to be raised upon the place. A fine large garden, stocked with fruit trees and many choice varieties of foreign and native grapes.

Crops—A very fine crop of corn, with the finest crop of pumpkins* we have seen. A large crop of turnips, all well cultivated. Active preparations for laying down grass land.

Stock—the largest and finest stock of hogs we have seen, with the exception of Mr. Turner's Berkshire, and Mr. Dickin's best brood sows and their pigs.

A large stock of cattle is kept, but the committee did not see them.

Fences—All of plank, and the best we have seen.

This farm not entered for premium; but it is one of the handsomest, best cultivated, and most highly improved, that has fallen under our inspection.

Farm of Isaac A. Goddin.

140 acres—About 90 open, and chiefly in cultivation.

Buildings—A large and excellent mansion-house, with appropriate offices; barn, stables, cattle sheds but ordinary—A fine spring, very neatly and tastefully improved by walling and turfing, &c., and covered by a good house.

Garden pretty good.

Crops—Corn, oats, hay, pumpkins, Irish and sweet potatoes—all good. We saw here the most productive species of corn, apparently, that has fallen under our observation—having generally two, and often three good ears upon a stalk. It was originally procured, as we learn, from the county of Caroline; and, in the opinion of this committee, is eminently worthy the attention of corn-growers.

Cultivation--Very good indeed--particularly of the corn-crop. Mr. Goddin's meadow land lies beautifully, and is all susceptible of irrigation, with very little expense. Much of it has recently been ploughed up, and re-seeded in a manner which commanded our admiration. We cannot, however, forbear expressing our opinion, that the proprietor would find it much to his interest to top-dress his grass lands with coal ashes, which his vicinity to the town seems to present great facilities for doing. We observed some marl on the margin of the meadows; but it has not been test-

*This pumpkin, of the largest variety, was introduced into the neighborhood by Mr. Robinson, (as we learn from a member of the committee,) and obtained from the lower country. It is an abundant bearer, and worthy the attention of cultivators. We are informed, that the sale of the seed is a perquisite allowed to Charles, of whom a supply may be had.

ed, and no application of it has yet been made to his farm.

Labor—Six farm hands, a part of them said to be inferior.

Stock—Four farm horses, one handsome young stallion, eight head of cattle, generally ordinary, but among them we noticed a very fine young cow and bull of great promise, about 15 months old. Hogs inferior—does not attempt to raise pork, considering it more advantageous to purchase. Mr. Goddin purchases no manure from the city, but raises a large quantity on the farm. His attention is chiefly directed to business which requires his daily presence in town. Notwithstanding this, his farm is highly creditable to him as an agriculturist.

Farm of Crutchfield Crump.

The proprietor not being at home, we did not learn the number of acres, or see any stock.

Buildings—Dwelling house, kitchen, stable and one or two other houses, generally out of repair. Fences tolerably good.

Crops and cultivation—Corn, oats, turnips, potatoes, stubble land very well set with clover, and the corn crop, taken as the labor of one man, very fine and has been well cultivated.

Labor—(as we learn from a member of the committee,) none but his own.

The proprietor seems to be aware of the necessity for enriching his land, and we observed a good deal of manure for the apparent means of collecting it, though some of it was wasting from neglect, supposed to be unavoidable. The general condition of Mr. Crump's farm does not entitle him to any of the premiums, but the crops afford evidence of great industry on his part, and he seems to have the spirit of improvement. Therefore, as a reward to his industry, and to encourage him in the improvement he seems disposed to make, we recommend that the society award him a gratuity of $10.

Farm of Major Miles Gardner.

—Acres—Finely situated for improvement, and has an abundant supply of marl convenient to it. We did not find the proprietor at home—nor any thing particularly worthy of note.

Farm of Thomas Jennett.

12 Acres. The committee accidentally called at this little place on the last day of their examination, and found every thing upon it in such admirable order that they feel bound to report it.

Houses are comfortable and in good repair, his land improved, and means in operation for continuing and increasing the improvement. Good crops of corn, pumpkins and potatoes.

Stock—Two good horses, two cows and some very fine hogs, especially a litter of three-fourths Berkshire pigs. Makes corn and forage sufficient for his family and stock.

Mr. Jennett is a cripple, unable to move about without crutches, and cannot himself perform the usual labor about a farm. But it is evident that his time and attention are fully occupied and well directed. He hires a colored man to do the work that he is unable to perform himself, and employs much of his own time in wagoning wood to the city. The committee regards this as a case of extraordinary merit, and they unanimously recommend the worthy individual to the favorable consideration of the society, and that a gratuity of $12 be awarded him.

Farm of John N. Shields—Poplar Vale.

130 acres—handsomely divided by live hedges of cedar into convenient fields of meadow pasturage and tillage, with a fine lot of forest land.

Buildings—A handsome mansion house of brick, brick kitchen, with all other requisite out houses, in good order, including stables and cattle sheds, a fine and well arranged farm yard, and large heuse for forage.

Crops—Corn very fine indeed, and well cultivated, oats, hay, turnips, and potatoes; fine garden.

This beautiful farm has but recently come into the possession of the present proprietor, whose progress thus far indicates that he is soon to take rank among the distinguished agriculturists of the society. His farm is finely watered, and by that and its vicinity to the town is convertible at small expense into a dairy farm.

When the requisite time shall have been afforded him for improvement, if not sooner, we doubt not the proprietor will be a successful competitor for more than one of the society's premiums.

The foregoing reports are given in the order in which the farms were examined from time to time, as we were enabled to devote ourselves to it during a period of several weeks, and including every farm entered for premium, besides several that were not. We confidently expected and intended to extend our examinations to the farms of several members of the society resident in other counties; but it was finally impossible to do so, and we therefore very reluctantly yielded to the force of unavoidable circumstances which limited our labor to the county of Henrico.

We particularly regret our inability to visit the farms of Mr. Corbin Warwick, in Goochland, and Mr. Lewis E. Harvie, in Amelia—of the improved system of husbandry on both which we had heard so much as to satisfy us that a faithful report upon them would have been highly acceptable to the society.

We trust we may be permitted to say for ourselves, that we have endeavored to perform the duty assigned to us in such a manner as to promote the objects of the society in advancing agricultural improvement, and in rewarding unpretending merit, industry, and good management.

In awarding the premiums offered by the society upon the most highly improved and best cultivated farms, this committee has been governed by what they believe to be a principle of vital importance laid down by the executive committee in fixing the amount of the premiums, to wit: "Reference being had to the means (as well pecuniary as others) of the proprietor for improvement—the amount of labor employed upon it—the means resulting from the vicinity of the farm to the city, &c. The object being to place the industrious small cultivator with limted resources, and no other labor than his own, upon the same footing as the largest cultivator with ample resources."

The committee, therefore, unanimously and without hesitation award the first premium of $25 to Thomas S. Dicken.

In like manner, we award the second premium of $20 to James Gordon.

As to the third premium, the committee were unable to agree upon an award.

Upon a subsequent and more thorough examination, which we felt ourselves bound to make of the farm of Mr. Edwin Hill, we award the fourth premium of $10 to him, and recommend his corn as the same kind cultivated by Mr. Goddin.

We observed, in the course of our examination of several farms upon which we have not reported, many evidences of great industry, directed without judgment or skill, and in a great degree neutralized, by reason of total ignorance of agricultural improvements and the application of labor. Still the spirit of industry is there, and some have caught the spirit of improvement too; are becoming sensible of the necessity for improving their houses and enriching their lands; but are uninformed as to the best means within their own reach of effecting that object.

It must seem incredible to those who have not witnessed it, that a man with a wife, and eight, nine, or ten children to provide for, and who, for that end, taxes his physical powers to the utmost, from the beginning to the end of the year, should yet be, or appear by his practice to be insensible to the inconvenience, discomfort, and risk of living in a house which has probably been occupied by several generations, without repair, and which, with every thing around it, is in the most neglected and dilapidated condition. Yet such is the fact, and, in many instances, with industrious, respectable, and meritorious men, who, it would seem, have no conception of the importance, and the economy too, of first attending to the security and comfort of themselves, and of every thing around them.

It is not necessary for us to offer a remark upon this mistaken and destructive policy—we hope to see the influence of the society applying the remedy, wherever there is industry and intelligence for it to act upon.

In conclusion, we are happy to have it in our power to report that, in the course of our examinations, we had the satisfaction of noticing a more general spirit of agricultural improvement than we were aware of. There is a fine field for the operations of the society, and every encouragement to perseverance in the cause. But there is much to do, and we believe one of the great principles of success is to be found in the encouragement of a class of cultivators, who heretofore seem to have been entirely overlooked. It is the men who guide their own ploughs, drive their own produce to market, and, in times of danger, shoulder their muskets and take the field.

A distinguished prose writer of our own country, satirically remarked of the people of a great commercial city of the north—that there, "the lawyer looks down upon the merchant, the merchant upon the grocer, the grocer upon the green grocer, and the green grocer upon the apple woman—who don't care a straw about any of them." We trust it is not so among us—but these sturdy citizens of ours who have as much sterling merit and independence of character as any men on earth, who regard with indifference or contempt the trappings of wealth and station, and ask no favor but of the Almighty—have been left to drudge on, generation after generation, without an effort to improve or to aid their agricultural labors. They do not want industry, but they want the light of agricultural science and improvement, which the necessity for constant toil and their own limited resources place beyond *their* reach, but which could so easily be imparted to them by those who are favored with knowledge, leisure and wealth.

These, and other considerations which address themselves forcibly to the patriotism and liberality of our more favored people, this committee would, if in their power, most earnestly endeavor to impress upon the wealth and intelligence of our old mother Virginia, throughout her extended borders. Give our people the lights of practical knowledge, improve our system of education, our agriculture and our mechanic arts, and the Old Dominion will once more be in the ascendant.

Respectfully submitted, on behalf of the farm committee,

WM. H. RICHARDSON, *Chairman.*

October 20, 1841.

The president then, according to the awards in the said report, presented to Capt. T. S. Dickin, premium No. 1, of $25—to Mr. James Gordon, No. 2, of $20—to Mr. Edwin Hill, No. 3, of $10—and to Mr. Thos. Jennett a gratuity of $12. But for good reasons presented to the meeting, it was determined not to pay the gratuity recommended to Mr. Crutchfield, and the subject was recommitted to the same committee.

Captain Richardson, then, from the same committee, presented the following supplemental report:

Supplemental report.

The undersigned feel bound in justice to the objects the society has in view, to offer the following supplemental report, which they do without the knowledge or concurrence of their colleague, Mr. Staples.

It is stated in our general report, that the committee could not agree upon the award of the third premium, and it is proper that we should give the reasons for that disagreement.

The undersigned, having heard much of the improvements on Mr. Staples' farm, wished to examine and report upon it. To this he objected from feelings of delicacy as a member of the farm committee, alleging, with much diffidence too, that there was nothing upon it worth reporting.

It was not until near the close of our examination, that the undersigned, calling for Mr. Staples at his own house, were so much struck with the almost magical improvement every where presented to view, that they felt it their duty to examine and report upon it. The following is the result:

Buildings—A neat and handsome dwelling and offices, excellent stables, corn-house and cattle sheds, all recently erected by Mr. Staples, and every thing about the homestead in fine order; enclosures good, partly of plank, very neatly put up.

Crops—Upon a farm which three or four years ago presented an aspect of hopeless sterility, there have been produced this year fine crops of corn, oats, clover and herds grass, hay, turnips and potatoes. We observed several large collections of ashes and stable manure brought from the

city, which, with the preparations on the place for increasing it, will afford the proprietor a large supply for his next year's operations.

Stock—Horses in fine order—cattle we did not see; but we saw some half Berkshire pigs, equal, as we think, to any that can be produced, as also a large and fine pen of store hogs for pork.

Respect for the feeling of delicacy manifested by Mr. Staples forbade our asking such details, as are embraced in the reports on other farms, and were the less necessary. The evidences of his merit as an improving and enterprising agriculturist were before and around us, and upon these we have no hesitation in assigning to him a rank with the first farmers of the society.

The undersigned, therefore, being a majority of the farm committee, unhesitatingly award to Mr. Staples the third premium of $15, assuring the society at the same time, that it is much below his deserts.

WM. H. RICHARDSON,
WARNER W. GAY.

October 20, 1841.

The third premium of $15 was then unhesitatingly paid to Mr. Staples.

According to the recommendation in the report on farms, the society also presented to Mrs. Wm. Miller a premium of $10 for the best crop of tobacco.

EUROPEAN FARMING.

From the Farmers' Monthly Visiter.

I think that the superiority to be observed in British and Flemish agriculture is to be attributed to the nice adaptation of crops—the perfect system that prevails in every department—the free outlay for manures to invigorate the soil—the patience that never tires in the completion of a task once undertaken, and the industry that in no kind of weather, at no season of the year, fails to remember and perform its tasks and duties.

England is remarkable for confining to certain districts, the productions which flourish best in those soils. Thus the light sands of Norfolk are best adapted to turnips, fed off and followed by barley and clover; therefore in that country the rotation of turnips, barley and clover prevails. It was by this course that Mr. Coke (Earl of Leicester,) reclaimed from perfect barrenness his splendid estate at Holkham. Warwickshire is famous for beans as a first course, followed by wheat. Lancashire for potatoes as a first crop, wheat and timothy following.

Not less perfect is the *system*: each one has his part and his duties assigned to him—he is *there* at all times, and in all weathers, and he stipulates to be *only* there. And this system pervades all things on the farm.

Upon a farm in Surrey, where I spent six pleasant and agreeable months, I had opportunity to see the use and the profits of systematic farming. It was a hay farm, of less than two hundred acres—the rent paid, about $2000. The whole farm, except the garden, was mowed. After the hay was taken care of, the fields were all shut up until there was a good feed upon them. Then Mr. R. went to the nearest fair and purchased large beeves nearly fat. In these fresh, luxuriant pastures, where the grass grew almost fast enough to render not fabulous Sir Boyle Roche's story of the kite thrown into an Irish meadow over night, hidden by the grass next morning, the beeves became in a very short time fit for Smithfield or Old Leaden-hall. After a few day's rest, the fair was resorted to for a second drove of cattle of smaller size, but in good flesh, which soon shared the lot of all fat oxen, and became the roast beef of old England. The fields were no longer in a condition to make beef, and therefore were to furnish the predicament "nearly fat" to take the "first bite" in some unfed meadow. The fourth course was a herd of small Welsh cattle to be merely improved. Fifth and lastly came sheep to be kept till the meadows began to start in the spring, when they were sold, and the meadows shut up.

To recruit this farm, the carts which took the hay to market returned laden with manures to be used as a *top-dressing*. When not bringing back provisions for farm use, I think I may say they always came back with manures. I had some years ago in my possession a book, which was borrowed by some kind friend or other, who liked it so well that he forgot to return it. This book gave the best account of the English practice with respect to manures, of any I have ever seen. It was said in that book that five thousand tons of manure had been applied in one year on a single estate. I know that the quantities are immense, and that the lands in that country are kept in a high state of fertility by the axiom impressed on the husbandman that *food is as necessary to the earth as to the human body*. But do not think that I have selected a pattern farm for the subject of the foregoing remarks. It was in all respects only a medium farm. There could not be the same opportunity for the more elaborate practices of husbandry that there is in large Yorkshire farms. It is my opinion that some of the best managed farms in England were on the estates of the Duke of Buckingham at Stowe, in Bucks. It is, however, the *fashion* in England to patronize agriculture: heaven grant it may become so here. You can form no idea with what ease an American can introduce himself to the English, if he is fond of farming. The gift of a few ears of Indian corn to the Horticultural Society, brought me tickets and invitations without number to their gardens and fetes at Chiswick.

SUBSOIL PLOUGH.

From the Farmers' Cabinet.

Sir,—I, too, was so fortunate as to be present at the trial of ploughs at the late Exhibition of the Philadelphia Agricultural Society, and can bear testimony to the superiority of the centre-draught plough for the purpose of cultivating the land preparatory to sowing, but whether it is equally suitable for stirring fallowed land, when it is necessary that the furrows should be set more on edge that the drag might take a greater hold upon them, remains a question, which ought, however, to be solved. Why does not Mr. Prouty take means to show the powers of his plough under various circumstances and in different

soils? The premiums he has obtained, and the desire which it is natural he should feel to bring his plough into notice and competition with others, ought to operate as a strong inducement to him to use every means in his power for this purpose.

But my present object is, just to say, the subsoil plough, with its operations, have convinced me that the system of stirring the hard pan is about to become the value of the rent of our land to us; and the thing is at once so complete and manifest, that it must have struck every beholder with surprise. Many had their doubts as to the feasibility of turning the next furrow-slice on to the loosened earth of the subsoiled furrow, thinking it probable that the work may be harder and the land might not lie so smoothly; but such was not the case, for the furrow was turned as easily and laid as evenly as though no subsoiling had been practised. But, only just think for a moment of the effect which the system will have on the tap-rooted plants; and more especially on the growth of the potato, when deposited on the loosened soil of the furrow and covered with manure, which will be carried down by every rain to the tap-roots of the plants imbedded in it, instead of the sets being laid upon the hard pan of the soil, at the depth of a few inches only, as they now are. I should expect that it will be the means of adding many thousand bushels to our crops, especially in a time of drought, enabling us to cope with "the Green mountain boys," who find it by no means an uncommon occurrence to turn up from 1000 to 1800 bushels to the acre! Where are these subsoil ploughs to be obtained? JOHN DAVIS.

Lancaster County, Pa.

FRUIT TREES.

From the Farmers' Cabinet.

The practice of draining, so necessary for the well-being of every species of vegetables, is found of superlative importance to orchards having unhealthy subsoils, the presence of which is easily shown by moss growing on the branches and a coarse and open bark. The Boston Cultivator states, that a Mr. Chinny has found by experience that the water in a retentive subsoil was so injurious to the growth of his trees, as to justify the expense of ditches cut from two to three feet deep to carry off the water, which, collecting in the subsoil, paralyzed and corrupted the tender roots. At the bottom of these drains is left a water-course about eight inches deep, covered with flat stones; on these some brush is thrown, and the whole is filled with the earth that had been dug out in forming the drains. Thus has he secured the most entire success on land that before had baffled all his attempts to raise an orchard. A periodical liming is of the greatest benefit to an orchard; so also is the washing of the trunk and branches of the trees with strong soap-suds, which also might be applied to their roots, opening the ground for the purpose. Pruning should be attended to, and practised annually, sparingly at first, or great injury may arise from the infliction of large wounds and the exposure of the trees to violent winds during winter, before the young wood had shot forth to protect them.

PROPER ARTICLES FOR EXHIBITION AT AGRICULTURAL SHOWS.

From the Farmers' Cabinet.

Mr. Editor,—The remarks by Joseph Stille, in the last No. of the Cabinet, on the late Exhibition of the Philadelphia Agricultural Society, contain matter for serious reflection. Although not present on that occasion, I have seen the same propensity for large cattle exercise an undue influence on the minds of many elsewhere, and in no place, perhaps, are persons wholly free from that partiality. The most likely thing to convince of the error that almost all have imbibed is, to impress upon them the axiom in stock-breeding, to begin with *dam the best*; relying more upon the female than the male for the production of large cattle of good proportions. It is easy to obtain large calves from overgrown bulls, but unless the cows be large also, the offspring is scarcely ever well-formed; often indeed are they found of a cross-bred, coarse, lanky character, as disgraceful to the breeder as to the sire. And these remarks were exemplified at the late Exhibition at Syracuse, where some of the smallest and neatest of the thorough-bred Devon bulls were best known and most highly prized, as stock-getters of the greatest value; and I must say, I consider the breeders of short-horns peculiarly blameable in this respect—pushing on their animals by means of the highest keep to mammoth size—all wrong, depend upon it.

I have been much pleased with some very judicious remarks contained in a late number of the New England Farmer, on this subject, and believing that a large proportion of your readers would coincide with the writer in the view which he has taken, if they had the opportunity to become acquainted with them, I have copied them for publication, should you approve. The editor says—

"Is there not reason for supposing that people are accustomed to exhibit at these fairs the *largest* squash, pumpkin, or ruta baga—the *largest* calf—the *largest* steers, and every thing the *largest* of its kind? Is size the principal thing regarded? And do the members of committees make *size* the criterion of merit? Such questions should find no place in our columns if we did not suppose they must, in too many instances, be answered in the affirmative. Now, what we wish to see is the *best*, not the *largest* merely. And it often happens—it *ordinarily* happens—that the very large calf is a coarse-made animal, unfit for a breeder. There are exceptions to this remark, and yet it is true as a general statement; many members of committees regard form and fineness of make in fixing upon their awards, still we never attended a show where we could feel satisfied that *size* was not too much regarded. If in our judgment we are correct, the influence of cattle shows tends, in some degree at least, to the introduction of a large

and raw-boned breed of cattle, which no well-wisher to the farming interest would ever desire to encourage. Other things being equal, we shou'd prefer, as a matter of profit, to be the owner of a cow or bull that was but little above the medium size, rather than of one extraordinarily large. Fineness of bone, symmetry of form, apparent thrift and hardiness of constitution—these are the important points. And in relation to young animals, intended to be kept as breeders, we should regard it as highly important to know something of the pedigree, so that we might *guess* whether the good points were merely accidental, or whether they were fixed in the blood, and would be likely to reappear in the offspring. A very finely formed bull, which happens to come from coarse parents, will, in but very few instances, produce his like; and for this reason we should make the parentage a matter of importance; not that we should be anxious to encourage in a region of short pasturage, the general introduction of "Herd Book" animals—but we should like to know that the parents for two or three generations back had been well-formed and profitable in our climate, and upon such feed as is usual here.

"When we come to fruits and vegetables, the matter is still worse. If a squash, from some mysterious and unconjectured cause, happens to become a *mammoth*, or to be curiously distorted in form, that is the one that must be carried to the show, while the cart-loads that are finely-formed, of good quality, and the causes of whose excellence can be explained and reapplied by the producer and others—these are left at home. So it is, to some extent, in relation to many other vegetables and to fruits.

"Now what we wish to see is, a fair specimen of a good crop, and accompanying that, we desire a statement of the mode of culture, so that we may obtain instruction that will be of service to us in our own agricultural and horticultural operations in future years. The mammoths, the dwarfs the deformed, which nature has made in sport, and which cannot be produced again by any particular processes of cultivation—these things are *mere* curiosities, and convey no useful information. The fairest, finest and best specimens (not in all cases the *largest*) are the proper ones to be exhibited on these occasions." Z.

Nov. 10, 1841.

THE MISSOURIUM, OR LEVIATHAN SKELETON.

The last number of the Farmers' Cabinet contains a communication on this subject, in which is the following passage:

"In the last number of the "Farmers' Register" it is said: "The Missourium, or skeleton of a double-sized mammoth, which has been exhibiting in the western cities, turns out to be a counterfeit, or at least so far factitious, as presenting a larger size of the *well-known* Mastodon, of which this is, *in truth*, a specimen." Now, from what I know of the gifted editor and proprietor of that first of all our agricultural publications, I am quite sure that it would only be necessary for him to take one glimpse of the object in question, to enable him to declare—which he would do fearlessly, although he might seem to some to have committed himself in the above expressed opinion—which however cannot be *his own*, for he is a man who never makes up his mind until he has had an opportunity of forming a correct judgment—that the bones are real, and go to show an animal hitherto undiscovered and unknown."

However little deserved may be the highest compliments paid in this passage to us and our publication, the writer has done nothing more than bare justice in acquitting us of all intention of detracting from true merit, or being unwilling to make amends for any such unintentional wrong. The short statement which is quoted above was part of our weekly summary of news, and was taken (in substance) from a paragraph in one of the northern newspapers, which has been widely republished, and of which a full and trustworthy refutation now is presented—and which we take pleasure in admitting to be such. The gigantic skeleton has recently been exhibited publicly in Philadelphia; and the strict scientific scrutiny to which it must there have been subjected, as well as the confirmation of two articles in the Farmers' Cabinet, would alone be enough to satisfy us that the enormous size and new character of these remains had not been increased by art and deception. We regret to learn that this skeleton has already been shipped for Europe, in pursuit of a more enlightened curiosity and of better pecuniary reward, than this country has furnished.

A previous and longer article in the same number of the Farmers' Cabinet gave a portrait of the skeleton, and an account of it from the pamphlet of its discoverer and proprietor, Mr. Albert Koch, from which we extract the following description and statement of dimensions.

"This gigantic skeleton measures 32 feet in length and 15 in height; the head measures, from the tip of the nose to the spine of the neck, 6 feet; from one zygomatic arch to the other, 4 feet; from the lower edge of the upper lip to the first edge of the front tooth, 20 inches; from the front point of the lower jaw to the first edge of the front tooth, 8 inches; from the edge of the upper lip, measuring along the roof of the mouth to the socket of the eye, 3 feet; from thence to where the Atlas joins the head, 10½ inches. The whole number of teeth is eight—that is, four upper and four lower, not including the two tusks. The two upper fore teeth are 4 inches broad and 4½ inches in length, and are situated in the head in such a manner that they slant towards the roof of the mouth, insomuch that their outer edge is 1¼ inch higher than their inside edge. The back teeth in the upper jaw are 7 inches in length, and where they unite with the front teeth, they are, like those, 4 inches broad, and from thence run narrower back until they end almost in a point. The formation of the nose is very peculiar: it consists

of a bony substance interwoven with cells, and presents a broad, flat appearance: it projects 13 inches over the lower jaw, and ends in two nostrils, which are somewhat raised on the face. This nose rests partly on the roof of the mouth and partly on the upper lip, which latter is somewhat arched on both sides, and forms a ridge in the centre.

"As I was successful in finding the right tusk solid in the head when I first discovered it, and as it remained fixed in its socket during its excavation and transportation over a very rough and wilderness country, I am enabled to give a correct and indisputable description of the position and situation which the tusks occupied in the skull of the animal during its life. They were carried by him almost horizontally, bending somewhat down, and coming with their points up again; their length is 10 feet, exclusive of 1 foot 3 inches which forms the root, and is hidden from the eye of the observer, as it is concealed in and under the skull. It is necessary here to remark, that the tusks are remarkably large in proportion to the size of the head, and also that their roots are perfectly firm and solid, so as to leave only space for the nerve. The body of those tusks has been a formation of coarse ivory, partaking somewhat of the nature of bone—so much so, that it will again unite and become whole after an injury; which is proved by the fact of the right tusk having a large scar, where it had been severely injured. As soon as the tusks leave the interior of the head, which takes place opposite the chin, they run parallel on each side of the nose, sinking down to the edge of the upper lip, until they reach the outer edge of it; from thence they make a sudden bend and run from both sides in a horizontal position, each forming somewhat of a semicircle. Measuring those tusks from the point of the one to the point of the other, following the curvature, is 21 feet; the distance across the head in a straight line, from point to point of the tusks, is 15 feet.

"Especially remarkable on the lower jaw is a protuberance; which is immediately situated over the *posterior mental foramen*, from whence it proceeds out of the *ramus* in a horizontal position; its point is somewhat bent down, inclining back; its length is $2\frac{3}{4}$ inches; its diameter at the root is $1\frac{1}{2}$ inches. I consider this protuberance peculiar to the Missourium, as I have never seen a similar one on any of the great number and variety of fossils I have disinterred or examined, or of animals of the present race, and as yet I have never heard it mentioned by other naturalists. Another peculiarity of this protuberance is, that it possesses points resembling thorns. I am of opinion that the above described protuberance was the location of some remarkably strong muscles attached to the lower lip, that gave it in a great measure the strength and faculty of a proboscis. This wise provision of nature has been necessary to the animal, as the upper part of the head is destitute of this appendage, or, at most, has had a snout not larger than that of the South American tapir. The whole length of this, the lower jaw, is 3 feet 1 inch; the greatest height to the condyle, 1 foot 7 inches; the extreme height to the coronoidal process, 1 foot $5\frac{3}{4}$ inches; the height of the ramus, $7\frac{1}{2}$ inches; the length of the posterior molar, 7 inches; its breadth, $4\frac{1}{2}$ inches; the length of the second molar, $5\frac{1}{4}$ inches; its breadth, 4 inches.

"*Measurement of the different bones contained in the skeleton.*—Each clavicle, 2 feet $\frac{1}{2}$ inch; and $7\frac{1}{4}$ inches in its extreme breadth. The first rib, 2 feet 3 inches in length; 6 inches in its widest part; the longest rib measures 5 feet $6\frac{1}{2}$ inches in length; the shortest rib, 2 feet 4 inches in length; the largest of the dorsal vertebræ, $2\frac{1}{2}$ feet; the scapula, or shoulder blade, 3 feet 1 inch in length, and 2 feet 7 inches in breadth; the humerus or fore arm, length 3 feet $5\frac{1}{2}$ inches; its greatest circumference 3 feet 3 inches, and its smallest part measures 2 feet 7 inches in circumference; the ulna is 2 feet $7\frac{1}{2}$ inches long; the radius is 2 feet $3\frac{3}{4}$ inches long; the carpal articulating surface is $5\frac{3}{4}$ inches broad; other articulating surface, $6\frac{1}{2}$ inches. The pelvis measures from the anterior superior spine to the edge of the pubis, at the symphysis, 3 feet 7 inches, which gives a total breadth of the pelvis of 7 feet 2 inches; the circumference of each bone of the pelvis is 13 feet 4 inches.

"The femur, or thigh bone, is 4 feet $\frac{1}{2}$ inch long, $8\frac{3}{4}$ inches in diameter; in the middle of its shaft the neck of the thigh bone is $7\frac{1}{4}$ inches in diameter; the head of this is $8\frac{1}{2}$ inches in diameter. The transverse diameter of the articulating surfaces or condyles of the femur, is 10 inches; that is, each condyle measures 5 inches.

"*The tibia and fibula, or leg bones.*—The tibia is 2 feet $4\frac{3}{4}$ inches long; 11 inches broad at its superior portion, and 8 inches at the inferior part; its diameter in the middle of the shaft is $5\frac{1}{4}$ inches. *The fibula*—the whole length of this bone is 2 feet $6\frac{1}{2}$ inches.

"There is a process connecting the tail with the os sacrum, which is 1 foot 8 inches in length; the said process is composed of six joints, which are inseparably joined together. Each of these joints is $3\frac{1}{4}$ inches in length; the one adjoining the os sacrum is $7\frac{1}{4}$ inches in breadth, but the remaining five joints of the process are rather narrower. The tail is composed of thirteen vertebræ, and is very short in proportion to the body of the animal, its whole length measuring only 2 feet $7\frac{1}{2}$ inches, but has been very broad and flat, and possessed of great strength.

"The fore-foot has four toes and a thumb; the longest toe measures 1 foot 8 inches; the shortest, 1 foot: the thumb, 7 inches. Each toe is possessed of four joints, and the thumb of two. The smallest and last of the joints of each toe, shows plainly that it was armed with a nail; the nails of the right foot turned out towards the right, while those of the left were reversed, and turned towards the left. The hind-foot is much smaller than the fore-foot; it has also four toes, but is destitute of the thumb. Its longest toe measures 1 foot 2 inches; its shortest, $9\frac{1}{2}$ inches. Both the fore and hind-feet have been webbed.

"*Peculiarities of the bones.*—All the bones, without exception, are firm, and contain no marrow; I believe the marrow was superseded by an oily fluid, which circulated through the bones.

"All the vertebræ are remarkably narrow, and must have given the animal a superior degree of action in the back; this is more particularly observable in the vertebræ of the neck, which gives it the appearance of being very short. The two posterior vertebræ adjoining the os sacrum are

united in one, which appears to have given the back more elasticity.

"The ribs are remarkably slender and short, in proportion to the size of the animal, and have had a great deal of cartilage attached to them: the six first are the strongest, and all have the singular peculiarity of standing half-reversed in the body; that is, the edge of the rib bends in towards the intestines, and the opposite edge outwards, showing great lateral action.

"*Comparison of the leviathan with the mastodon.*—The most striking difference between the leviathan and the mastodon, are, 1st, the leviathan had no trunk, therefore could not be classed under the probossa genus; 2d, its toes were armed with claws or nails, and this circumstance prevents its being classed with the hoofed animals, to which class the mastodon belongs; 3d, the leviathan has 24 dorsal vertebræ and 48 ribs, together with two collar bones or clavicles; whereas the mastodon has 19 dorsal vertebræ and 38 ribs, and no clavicles; 4th, the scapula or shoulder-blade is materially shorter in the leviathan than in the mastodon, also the ribs are much smaller; 5th, the dental system at the first view somewhat resembles that of the mastodon, but upon a close examination, the observer will perceive that the teeth of the leviathan are much smaller in proportion to the maxillary bones than those of the mastodon, and also better calculated for masticating softer substances.

"*Supposed habits and nature of the animal.* The animal has been, without doubt, an inhabitant of water courses, such as large rivers and lakes, which is proven by the formation of the bones: 1st, his feet were webbed; 2d, all his bones were solid and without marrow, as the aquatic animals of the present day; 3d, his ribs were too small and slender to resist the many pressures and bruises they would be subject to on land; 4th, his legs are short and thick; 5th, his tail is flat and broad; 6th, and last, his tusks are so situated in the head that it would be utterly impossible for him to exist in a timbered country. His food consisted as much of vegetables as flesh, although he undoubtedly consumed a great abundance of the latter, and was capable of feeding himself with the fore-foot, after the manner of the beaver or otter, and possessed also, like the hippopotamus, the faculty of walking on the bottom of waters, and rose occasionally to take air.

"The singular position of the tusks has been very wisely adapted by the Creator for the protection of the body from the many injuries to which it would be exposed while swimming or walking under the water; and in addition to this, it appears that the animal has been covered with the same armor as the alligator, or perhaps the megatherium."

HIVING BEES.

From the Farmers' Cabinet.

I am glad that due attention is likely to be paid to a very profitable and pleasing branch of husbandry—I mean bee-keeping, and cannot but approve many valuable articles that have lately appeared in the Cabinet on that subject—the letter from a bee-keeper in No. 2, for September, in particular. But is it not strange that so little has been said by any of them on the best mode of securing the swarms on leaving the hive, as also on offering them facilities of colonization by which they might be induced to "pitch their tents" nearer home, and thus prevent the loss of hundreds of the finest and strongest of the swarms, which are continually escaping into the woods, or enriching our distant neighbors with their treasures? At best, all the directions which I have seen or heard of, were most clumsy and uncertain, until I happened to meet in an eastern paper with the following, which are deserving record in your pages, and will, I have no doubt, be practised the next season with profit to many of your readers.

The author says: "As the season for swarming approaches I cut an evergreen, such as fir or spruce, above 6 or 8 feet high, and trim off all the branches on one side close to the tree, so that it may be laid flat on the ground; the lower end, or but, is sharpened like a stake, and set in a hole made by an iron bar in the ground about 10 or 16 feet in front of the hives. Swarms will very seldom seek any other resting-place, when a bush like this is at hand. When a swarm leaves the hive I say nothing, but stand and look on, until they become still and quiet on the bush. I then carefully raise the bush from the hole, and lay it flat on the ground, and place the hive over them. If the limbs on the upper side interfere, I press the hive down and lay a stone or some heavy substance on to keep it in its proper place, till the swarm takes possession, which is generally in ten or fifteen minutes. In this way I have never lost a swarm, and have frequently hived a swarm and removed them to the bee-house among the old hives in one hour from the time of their leaving the hive.

"Another way is as simple, and, as far as I have tried it, equally sure. I take a board wide enough to set a hive on, and 2 or 3 feet long; bore a hole in the centre, and drive in a pin, 1 or 2 inches in diameter, and 8 or 10 inches long. I then take two small cords, and fasten the end of each to the corners of the board, so that they form a loop at each end of the board, about 2 or 3 feet long. This board, thus prepared, I suspend from two stakes in front of the hives, with the pin pointing downwards; taking care that the stakes slope towards each other, so that the board may not touch at the end. Around this pin the bees will cluster, and when they get still, unhook the cord from the stakes, turn the board over carefully, lay it on the ground and set the hive over it. In this way much time and trouble may be saved; for there is no need of watching for swarms—only provide such resting-places, and there you will find them. I have left a swarm suspended under the board, as last mentioned, through the day, and found them safe in the evening, and hived them after the other labor of the day was past. I think, on the whole, this method the best, as they seem more contented under cover of the board than when more exposed, and not so likely to take wing before they are hived." B.

MEDIUM-SIZED VS. LARGE HOGS.

From the Western Farmer.

Mr. Editor,—You are aware that I am now, and have been ever since 1820, extensively engaged in pork-packing in this city; and I feel that I may without presumption lay claim to not a little experience in the business. It is fully as much to my interest, and that of every one else engaged in curing pork for market, as the interest of the farmer, that the very best breeds of hogs should be scattered over the country.

When I first entered into it, the pork brought to us was produced from the same miserable race yet to be found through much the greater part of the West. It yielded us little lard, and the sides were unfit for mess or clear pork—too thin, and only fit for bacon. The first improvement we had was the little chunky China hog—a perfect mass of lard—hams light and too fat—though the waste of offal was trifling. The next we had was the large Warren county hog, requiring years to mature, and then coming to us of an enormous weight—great waste of offal—the hams too large and badly shaped, as was also the shoulder—and the sides, nevertheless of their great size, were thin in proportion. They were still a great improvement. The crosses of these and the Russia and Byfield, in the hands of some of the more judicious breeders, produced a very excellent hog—and we who were the purchasers, were anxious for any improvement on the unprofitable wood hogs usually raised.

Though, as I have remarked, so long engaged in the business of packing, I had paid but little attention to the breeding of hogs, though always keeping a few of the best I could find, on my farm, and improving them to the best of my ability. It was not until some of the part-bred Berkshires were brought to us from Butler and Warren counties, that I was struck with the great improvement they were on any thing I had yet seen. The perfect manner in which they were fattened—their extraordinary length of body, and the thickness of the side meat—their small, yet thick, fleshy shoulders—the great weight and handsome form of their hams—the great yield of lard, and little waste of offal, either of inside waste, or head and bone, proved to me that they were a something entirely different and altogether superior to any other breed within my knowledge. On making further inquiry respecting them, I found them equally advantageous to the farmer and drover, as to the pork-packer. Prolific and easily kept; maturing early and fattening kindly to as great weights as were desirable; stamping their own character strongly on any other breed with which they might be crossed; and travelling well to any reasonably distant market.

I had before this been breeding hogs for sale, and seeing, at a glance, the great advantage it was going to be to me in my packing business, to have such a hog as the Berkshire in general use, I at once engaged in it largely.

True it is, that I cannot give up my farm, and my attention and capital, to the breeding of fine stock, without a prospect of making money by it; but that was the secondary object I had in view—my pork-packing business was of the first importance to me. I saw and dreaded the efforts that were made to introduce an extremely large hog into Kentucky, for I had about this time transferred my pork business to that state, and had gone to very great expense in erecting an extensive establishment back of Covington, and intended making my entire purchases in the state. We can make no use in this market of animals weighing from 400 to 600 lbs., even though they may be well fatted. A hog of the proper form and quality of meat, that matures at ten or twelve months old, so as to fatten properly, and then weighs from 200 to 300 lbs., is the sort for which we will give the highest price, because it yields us the greatest profit. And most assuredly it will also pay the farmer best. We have no population to supply, that will consume large, coarse, indifferently cured meat. Our principal demand is for city and family use, both here and in the cities of the south and east. The ham is with us the most valuable part of the hog, and the celebrity of those cured in Cincinnati is now great. This part must be heavy without being large—round, thick and plump; the flesh, though principally lean, yet marbled with fat. Next to the ham the lard and side meat yield us the greatest return—the former must be abundant in quantity and fine grained, which never is the case with any hog until he has somewhat matured; the latter must carry its thickness throughout, having no thin flanky parts, and must be fat—and last we rank the shoulder and the jowl.

Many of the Boston and Richmond dealers, and those from the other cities in the east and south, come here annually to have meat packed; they all prefer such a hog as I have described, and will buy no other if they can help it. How the drovers, who are represented as driving to Richmond and Charleston, and as preferring the largest sized hogs, can possibly dispose of such animals there, I cannot understand. Nor how meat of a size that I know from experience cannot be cured, even with the aid of cool cellars, *here*, can be kept *there*, surprises me. Think of a pair of hams, Mr. Editor, weighing 148 lbs., in the climate of Charleston, or Richmond, or Baltimore! They would indeed require to be cut in two—and then what a sightly object!

Still some regions of country *may* require a larger hog than others; and to supply those who may think so, Mr. A. B. Allen, now on his way to England, will import for me some of a size sufficient to suit any taste. For my own part, and for my use for packing, I want neither an extravagantly large hog, nor yet a very small one. A hog that has to be fed two winters, never will pay first cost; if he can be had of sufficient size without wintering at all, so much the more profit. A spring pig killed in the fall at 200 lbs., net, will evidently pay better than if the same hog had been kept over winter, and reached the second fall 500 lbs., net.

I have been speaking now as a pork-packer, not as a breeder; and what I have said, I say in all sincerity. I have no desire to injure the business of any other breeder of improved hogs, nor to prevent their continuing their improvements to as high a point as they please. But I do regret to see gentlemen of science and experience going back to a large, coarse hog, such as the Woburn, Irish Grazier, or Leicester, when they can procure a breed so infinitely superior—the *improved Berkshire*.

JOHN MAHARD, Jr.

HORN-AIL.

From the Farmers' Cabinet.

Mr. Editor,—Having persuaded myself that the practice of boring the horns and applying spirits of turpentine, &c., in the disease called horn-ail, (which is so very prevalent in America,) is entirely wrong in principle, and has the most pernicious consequences in practice, I deem it not improper to recommend, by the means of your valuable periodical, a system of cure by which, during a long veterinary practice, both in France and in Philadelphia, New York and Harrisburg, I have been successful in most cases; while by the common way of proceeding *no animal is saved*, some either not having been attacked by that disease, or getting cured by nature itself.

This disease is also called the "red water," or blood in the back or loins, and arises principally from the cattle being at grass during the summer on lots which are very dry and without shade, and from their being exposed to excessive heat of the sun, and to great cold in winter time; there are various other causes, as moory pastures, moist weather, &c., to all which cattle in this country are generally exposed; sour and mouldy hay, the exclusive feeding on corn-stalks, also contribute a good deal to this disorder.

As this disease is of an inflammatory character, the application of spirits of turpentine and the like, which *produce* inflammation, is entirely wrong. This is shown by the strong throbbing of the heart, the mixture of the urine with blood; if you stir with the fore-finger in the mostrils of the animal, a good deal of blood will be discharged from them, and if you insert your hand into the straight-gut, you may bring out whole lumps of blood. Boring the horns is at most curing *symptoms* and not the *disease*; the farmer is unfortunately confirmed in this proceeding by the fact, that matter sometimes is discharged from the bored horns; but it is neither recommended by any experienced veterinarian, nor mentioned in any scientific work on the veterinary art. I therefore feel myself bound to recommend to every owner of cattle the following mode of cure, tried by me a good many times with success:

When an animal is observed to be suffering from this disorder, one or two quarts of blood, according to the size of the animal, are to be drawn immediately from a neck-vein; then two table-spoonfuls of the following powder are to be given three times every day, the powder being previously dissolved in a pint of lukewarm water; this is to be continued until the animal recovers.

Glauber's salts - - -	6 ounces.
Cream of tartar - -	2 "
Purified saltpetre - -	2 "
Powdered root of althea -	1½ "

It is necessary besides, to rub the animal frequently during the disease, principally on the back. But if the animal should be costive, either of the following clysters is to be given:

Take a handful of camomile flowers, two handfuls of flaxseed; boil them in two quarts of water, strain them, and add eight ounces of linseed oil and three table-spoonfuls of common salt. This clyster is to be applied by the means of a syringe.

Should these articles not be at hand, take one quart of wheat bran, pour two quarts of boiling water on it, strain, and add eight ounces of flax-seed oil and two ounces of common salt. This clyster is to be lukewarm when applied to the rectum, or straight-gut, by the means of a syringe or a fit funnel.

N. B. The above cure is described in a small work, published by me last year, in the English and German languages, entitled, "A short General Adviser in the most common Diseases of Horses and Cattle, &c."—which may be obtained at the corner of Callowhill and Second streets, Philadelphia, price 50 cts.

JOSEPH FIEHRER,
Veterinary Surgeon.

Harrisburg, Oct. 6, 1841.

A DAY AT RIDGEMONT.

By Mathew Marmaduke Milburn, Assistant Secretary to the Yorkshire Agricultural Society.

From the London Farmers' Magazine.

Few things, perhaps, afford better opportunities for the agriculturist to improve his knowledge of the practice of his employment, than visiting and inspecting the systems of cultivation, improvements, and practices of other farmers, in different districts of the country. And I know of no recreation which so relieves the application required in the close supervision of the cultivation of a farm, as a visit to a scientifically managed estate, whether we agree with, or dissent from, the plans of the cultivator. It was with uncommon pleasure that I had an opportunity, recently, of riding over that model of careful and excellent cultivation—the farm of William Stickney, Esq., of Ridgemont, in Holderness. To a light land farmer many things were necessarily new; and had I gone over a farm having in general, with a few exceptions, abundant crops, stock of good quality, and well ordered fences, doubtless the reflections would have been delightful; but it was not the abundant crops of waving corn—not too heavy to lodge, and still not any thing wanting—that I found to admire, but it was the manifest spirit of improvement in the direction of the whole—the perfect system, order, and uniformity which prevailed, and which reminded me, not of improvements rapidly, and extensively, and fitfully commenced—not of rash experiments made without judgment, which clearly must fail—not of absurd theoretical views attempted to be forced into practice—but an extensive view of what is excellent in cultivation, carefully adopted, and carried out in its details with all the regularity and care of well ordered machinery.

It is not my intention to give a report of Mr. Stickney's general mode of culture, which would be quite out of place, after the lucid and interesting report of the cultivation of this farm, published by Charles Howard, esq., but simply to commit to paper, for the benefit of your agricultural readers, what I saw going on in June last, the period of my visit. The road to Ridgemont is somewhat winding, and passes through a considerable portion of the farm: the sides of the carriage road, carefully mown, clearly indicated that while nothing was wasted that could supply food

to the animals, it was carefully conveyed away for the purpose of soiling, that the manure made from it might be collected and usefully applied, instead of evaporating and wasting, so unsightly by the sides of the road. To the left were some large fields of oats, late indeed, but beautifully drilled, and having the most luxuriant and thriving appearance, (and every farmer knows that very late sown oats cannot look too luxuriant.) Two men were employed in pushing a hoe before them between the drills, to destroy every weed, and open a new surface of soil to the atmospheric influence, to imbibe oxygen and carbon from the air. I have long been of opinion that the great frequency of fallows on strong land, generally adopted, was not altogether necessary; and the practice at Ridgemont most triumphantly proves it, for four, five, and six years intervene in the rotations between the fallows. But soon a fallow field I did see, and in such condition. Advantage had evidently been taken of the preceding fine season, for its working was, so far as root weeds were concerned, completed; and I urged that it was fit to sow with rape, and thus get a green crop in the fallow year of the rotation.

The next object was a field of beans in flower, not indeed very tall and growing, but beautifully clean and beautifully *level*—the best criterion I know of, of a useful crop and *good* management: to this, however, there was one exception. Mr. Stickney pointed to one round portion of the field, perhaps sixty yards in diameter, where the beans were several inches taller than any other part of the field. Of this I should have been disposed to take but little notice under ordinary circumstances, imagining that it had been the site of an ash heap or mixen in some previous year; but I was astonished when I was informed that it manifested this superiority every year, and had done so for centuries, or at least so long as any memory or legend could go. It is invariably managed like the rest of the field, and no matter what crop is grown, whether wheat, beans, oats, or rape, it always exhibits the same superiority, and for the same circumference; and it did the same when it was in grass, in the time of the present occupier's ancestors, whether mown or depastured. The soil and subsoil, to a considerable depth, has been examined with some care—rather superficially I apprehend—and no perceptible difference exists from the remainder of the field. The idea suggested itself to me, that possibly it might be the site of a Roman encampment, and that, at a considerable depth, a large quantity of bones might be interred, which, by giving off ammonia in the process of their decomposition, gave this decided superiority to the crops growing in the place. This is, however, quite unsupported by any evidence, and is perfectly gratuitous on my part.

The fences at Ridgemont are a perfect model; all beautifully luxuriant, completely filled with thriving quicksets, and kept in the most beautiful order. Mr. Stickney commenced quick-wood planting in the ordinary way of three inches apart; he observed, however, that those planted the thinnest were the most luxuriant, and he planted them six inches wide. Finding this answer his expectations, he ultimately planted them nine inches apart, with decided success; so much so, indeed, that the great part of the beautiful thick fences I saw, were the result of this system. It ought to be known, however, that the quicksets were not thrust in, and no more attended to; but planted with the soil in good order, and cleaned and *cultivated* with as much attention as is manifested in the rest of the crops.

The great quantity of straw grown by this excellent cultivation has to be converted into manure; and no more turnips are grown on the farm than serve the ewes in the spring. This evil is met by growing a considerable quantity of green crops in summer, especially tares, and soiling; by this means a very large quantity of excellent manure is made, and summer-made manure is worth nearly double that made in winter, if there is an equal quantity of green food consumed in both cases. The drainage of the yard is conveyed into a tank or reservoir; and as Mr. Stickney has not found such beneficial results from the application of the liquid to the soil in his farm as to induce him to cart it away,* he conveys it to the driest part of the straw and dung in the fold-yard. The liquid being thus constantly returned, excites fermentation in summer, but in a wet season must be superfluous, and much of the benefits of it are lost by evaporation. I differ too, most entirely—and it is only fair to name it, for it is the only "eye-sore" on the farm that I witnessed--and that was the manure was carted to the road-side instead of being conveyed into the field at once. It requires a good reason to excuse this under any circumstances; for how carefully soever it is shovelled up, there is always much wasted which ought to be applied to the field and for the crop, for which it was intended.

The stack-yard, while it exhibited evident care of the grain, and an excellent contrivance, simple yet efficient, for admitting the air to the stacks by placing them upon raised clay platforms, bisected in the middle in connexion with an air flue in the stack; yet there is nothing of that foolish, fantastical dressing of the stacks, more as if they were intended for permanent pyramids, than preserves of grain from wet for a few months.

The agricultural implements are of the useful cast—nothing whimsical, nothing ridiculous—but such as the evident wants of the district require. I saw, too, a Russian plough and harrow, certainly the rudest and worst constructed nonentities I ever saw, only fit companions to the Russian loaf they were exhibiting during the elections. I advised him to exhibit them at our exhibition at Hull, which he did, to the no small wonder of the persons who noticed them.

From the appearance of the grass land, it is evident that no pains have been spared in laying it down to permanent pasture. His own introduced rye-grass forms a considerable part of the best grass fields, and sustains the character, both there and elsewhere, which it had in 1817, and which obtained for its introducer the medal of the Society of Arts. There was, too, in one of the most beautifully cultivated gardens I ever saw, a specimen of his giant clover, (*Meliota Maxima.*) At the time I saw it, it was at least six and a half feet high, and a stem of it which remained of the previous year's growth was more than double that height;

* I have found the most beneficial effects from its application to light soils.

of course it would not be allowed to grow so high in ordinary cultivation, but its rapid growth (several inches in twenty-four hours) renders it very valuable, if it succeeds in our climate, of which, from the specimen I saw, I have no doubt whatever.

It is time my lengthy paper came to a close. If any one were to ask me where he could see excellent practical, strong land farming, I would say—Go to Ridgemont.

Thornfield, Thirsk.

ON PEAT.

From the London Farmer's Magazine.

Peat of moss is one of the most recent deposites of the alluvial formation, of the origin of which various opinions are entertained. Six kinds have been enumerated. Some reckon it a primitive formation, and of antediluvian origin; others think it a growing vegetable, which by its decay causes the increase of the substance, and may ultimately cover the earth; and the more general opinion ascribes it to the collection and decomposition of ligneous and aquatic vegetables brought together by the destruction of forests by wars, by the axe, and by tempests, and accumulated by the decay of those bodies, and of the plants, encouraged by their decomposition. Formations of peat chiefly abound in moderately cold latitudes; they cover vast tracts of conntry in Scotland and in Ireland, and are found in the different states of solid peat, cut and dried for fuel, and of a black or brown color, extending to depths of four to twenty feet; in boggy or flow moss, which is supplied with too much water, and prevents the consolidation; and in many varieties of peat earths of shallow depths, forming soils of that name, sometimes cultivated and oftener unimproved---sometimes clad with a scanty covering of heaths and coarse vegetation, and often naked and uncovered with any growing plant. The theory of the formation of peat by the decomposition of the collection in hollow places of trees and leaves, of vegetation, by the action of air and water, and of the subsequent growth, has been generally received as the most plausible; but we find mosses of great extent on the tops of mountains, and on high grounds, and even on declivities, where no water can stand, and where no collections could be formed. Trees of great size have been found in mosses, and also shrubs of various kinds, and the leaves and fruits are not unfrequently met with in different stages of decay. The mosses that are cropped as land are not adapted for fuel, the composition is too friable and earthy, and the circumstance of the top of many mosses being of a different color, and spongy and fibrous, favors the opinion that the decomposition of the vegetable covering adds to the bulk of the moss, as it appears to be in a more recent state of decay than the bottom parts, which have become a black, pulpy substance, from which all traces of fibrous organization have completely disappeared. Formations of peat are found in vast beds from four to twelve feet deep on level grounds, and on declivities where no water stagnates, and where trees and vegetable matters sufficient to form the moss can hardly be supposed to have grown, and where no remains are ever found. Mosses generally rest on clays and marls, and very often on gravels and clayey gravels with white sand; and theorists are driven to the supposition that there exists a predisposing cause towards the formation of that substance in the woods on which the moss commenced growing, and in the climate, and in the subjacent formation, and also in the production of the plants that are adapted by the decay of their constituent parts to afford the peaty substances. But all the reasons yet given, the conjectures, theories, and suppositions, are unable to account for the great variety of the formations of moss, a solid mass, black and pulpy from top to bottom, is often found adjoining a formation of spongy fibrous materials, alike at the top and on the substratum of clay, and both existing under no apparent difference of circumstances; the former bare and uncovered, and incapable of supporting weight; the latter matted over with a thick growth of vegetables, supporting heavy weights, and affording a pasturage to animals. The varieties are numerous; some afford fuel wholly, others are cultivated, while many are unfit for either purpose, and descend by many gradations to a shallow stratum of a few inches in depth, and are called turfy, moorish, and peaty soils. The antiseptic quality of peat is well known, and preserves substances from decay; unlike fens and marshes, the air is healthy and salubrious, which shows that the moss is not in a state of putrefaction. Moss grows and enlarges upwards after being dug and carried away, supposed by the plants dissolving by the maceration and decay of their parts, and not by any process analogous to putrefaction, for they remain without undergoing the usual chemical change. The sterility of moss is ascribed to the want of the putrid fermentation, for it is inflammable and phosphorescent, qualities wholly removed from bodies that have undergone the process of ultimate decay. Moss and vegetable mould are reckoned homogeneous substances, altered by the different circumstances in which they are placed, and the external agencies to which they are exposed; but this fact, when granted, gives no reason for moss and mould being produced in adjoining situations, where little or no difference in external circumstances would be supposed to exist. No living animals exist in moss; to form it, dampness and astringency are required, and the water must be antiseptic, which is said or thought to derive that quality from the subsoil. But we are equally in the dark whether the astringent and antiseptic quality be derived from the subsoil, the climate, or from the plants that grow on the place of formation, or from the combined influence of all these causes joined together; the scientific reasonings of theorists are generally overturned by facts, and by the appearances of nature; and after all the opinions and conjectures that have been put forth, the more reasonable and natural conclusion would seem to be, that moss is an original formation, augmented, like other formations of a similar nature, by physical agencies still going on, and that it has been produced and located by causes, for a solution of which our wandering imaginations may ever search in vain. J. D.

DR. BOUCHERIE'S PROCESS.

The following article from a French writer "on the preservation, &c., of wood," was translated for the Savannah Republican:

Since the Academy of Sciences and the Chamber of Deputies approved and recommended to public attention the ingenious process, discovered by Dr. Boucherie, of Bordeaux, for the preservation, elasticity, hardness, and coloration of various kinds of wood, the learned and commercial world await with impatience the result of the experiments which are going to be instituted on a large scale.

The learned doctor has received from government a mission to experiment on the fine forests of the south of France, and every facility has been afforded to him for the successful application of his discovery. The process employed by him is very simple, and he has made no secret of it. It consists in using together vital force and pressure, in order to propel into the whole texture of the largest bodies of a vegetable nature certain liquids, conveniently prepared. These liquids, insinuating themselves quickly through the whole organization of the fibre, from the trunk to the most delicate fibres of the leaves, drive before them the aqueous parts of the sap, which either evaporate or flow down, whilst the salts that they hold in solution, combining with the mucilaginous or solid particles, destroy for ever, if they are of an antiseptic nature, all tendency to fermentation, and consequently to decomposition.

Numerous experiments have shown to Dr. Boucherie that deliquescent salts and the primitive waters of salt pits communicate to wood a very great flexibility; and this is such that a wooden ruler, although exposed for many months to the changes of the atmosphere, preserves its elasticity, without undergoing any sensible alteration. He has also found that pyrolignite of iron hardens a thin plank, so as to render it impenetrable to a musket ball, and at the same time that it saves it from decay; and that fluids imparting color and smell can communicate to wood their valuable properties, so that they make it fit for the heaviest works, as well as for the construction of the richest and most delicate furniture.

But of all the public departments, the one which is likely to derive the greatest advantages from the beautiful discovery of Dr. Boucherie is no doubt the navy. Every one knows with what rapidity the body and the masts of ships of war are destroyed. By means of the new process the durability of ships can be prolonged, if not indefinitely, at least in a very high proportion; and also the wood used for railroads becoming incorruptible, much expense may be saved, and great benefits obtained.

Moreover, a new fact seems to show that it might be possible henceforth to dispense with the very heavy expense of coppering ships. Timber prepared by Dr. Boucherie, and placed in constant contact with sea water, during a long voyage from Bordeaux to Bourdon, has been preserved from all kinds of alteration.

The results of the experiments now in progress will soon be known; and, indeed, we cannot doubt of the success when we consider those already obtained and attested by the report of the learned Dumas, in the name of a commission composed of Messrs. Mirbel, Arago, Poncelet, Audouin, Gambey, and Boussingault, members of the Academy of Sciences. The authority attached to such names is too great for requiring any commentary on our part. We shall merely extract from that remarkable report the following passage:

"The aim of Dr. Boucherie is to render wood much more lasting, to preserve its elasticity, to protect it against those variations of volume, resulting from the influence of wet and dry weather; to diminish its combustibility, increase its tenacity and hardness; and, lastly, to impart to it colors, and even odors, various and lasting.

"To affirm that all these conditions have been fulfilled, by means of common and cheap substances, is to fix the serious attention of the Academy on the very important subject which we have just examined."

ON CIDER MAKING.

From the London Farmers' Magazine.

Dumbleton, August 23rd, 1841.

My dear sir,—In conformity to the request of the Winchcomb Farmers' Club you kindly transmitted to me, I give you the process of making my best cider and perry, and in as few words as I am able to convey it.

The apples being ripe and laid in a heap a fortnight, exposed to the weather, uncovered, about eighteen inches deep, they are then ground in the cider-mill, which consists of a circular stone in form of a solid broad wheel, about 4½ feet in diameter, 14 inches wide, and weighs about 18 cwt.: is supported on its edge, and drawn by a horse in a circular trough of stone, about 8 feet 9 inches in diameter, and about the depth of 12 inches, including the wooden rim upon it, which is three inches, and much like a bark-mill. In this trough near two bushels of apples are ground at a time, with a handful of charcoal strewed amongst them, until the kernels and rinds are broken small, *as much of the strengh of the cider depends upon it*. This fact was proved in the Agricultural Report of the Rev. John Duncomb, in 1813, by an experiment made by Dr. Symonds, of Hereford. "He made one hogshead entirely from the rinds and cores of apples, and another from the pulp of the same fruit. The former was of the most unusual strength, and high-flavored; the latter was watery, and possessed not one recommendation."

A horse with a man and boy will grind sufficient pommage to make two hogsheads of cider in a day, which is left in open tubs twenty-four hours. It is then pressed between several haircloths by a strong screw-press, and the cider is taken to the fining house, and put into a hogshead or longer vessel. In a few days it will ferment, and throw up the must. When that appears, it is drawn off into tubs, and about one pound of pulverized charcoal is stirred in it, and is left for some hours, or until the next day, when it is put into the dropping bags to fine and to stop the fermentation; and with one dozen made with *thin* calico of sixpence the yard, suspended from frames, the cider is passed through, *being previously dredged inside with pulverized charcoal*. These dropping bags

are in the form of ordinary jelly bags, and their hoops are fourteen inches in the clear. For a short time the cider will run muddy through the bags—by continuing to fill them it will soon become clear. The muddy cider in the tubs is then removed.

From one to two hogsheads a day will fine by the process, but some fruit fines much quicker than other: *the apples should not be too mellow;* and pears when quite ripe should be grouud as soon as collected. Apples with yellow pulps, and red and yellow make the best cider—green apples the worst. The cider you call " delicious' was made with pearmains, Blenheim oranges, and bromleys, mixed in equal quantities.

The dropping bags must be replaced by clean ones the next morning to filter the cider left.

The cider being now fine, with the full flavor of the fruit, it is put into a cask in a *cool* cellar with the bung off. Within a few days another fermentation will commence, and the cider will have a pearly whiteness, being the commencement of the acetous fermentation. As soon as perceived, it must be run through the charcoal bags as before, but it will pass through *four* of them quite clear in less time than it previously ran through the twelve. It is then put into the cask, and left with the bung off until March, but should any fermentation be afterwards perceived, it must be drawn off to stop it, and returned to the same cask or another.

In making the common cider, it is carried to the cellar direct from the cider mill, and is left to its natural fermentations until December, when it is bunged close. But if any part of the best be wished to be preserved for the use of the family, it can be filtered in the cellar after throwing out the must.

Every vessel used must be quite clean, and free from the acids of bad cider or other liquors in the wood, or the whole will be spoiled.

The first fermentation is the vinous, the second the acetous, and the last the putrefactive: the use of the charcoal dropping bags is to fine the cider and *stop the fermentation at the vinous process*, and which it does effectually; and in the same manner all wines can be fined and the fermentation stopped whenever required, and the flavor of the fruit preserved. But these charcoal dropping bags are also valuable *to cleanse impure water at sea*, impure river water which supplies large towns, and soft water for washing, by removing the soot and dirt from it. That they have been only partially used since the years of their discovery, notwithstanding *the cost of each bag does not exceed sevenpence*, can arise, I fancy, only from the common practice of rejecting every thing that is new for a while, however good and useful for general comforts, until good sense triumphs over the prejudices of vanity.

Ever, my dear sir, your's sincerely,

JAMES RICHARDS.

To Edward Holland. Esq.,
Chairman of the Winchcomb Farmer's Club.

HISTORY OF THE WEATHER.

From the Journal of Commerce.

With an old work published by Pilgram, at Vienna, in 1788, combined with the observations made by Professor Plaff of Keil, Offeffor, of Germany, has compiled a work, entitled The History of Climates and Changes. For the gratification, as well as information of the reader of the journal, I quote various extracts made by Taylor, in a work published by him in London in 1830.

"It is very difficult to ascertain the precise condition of the weather in distant ages. The thermometer was not invented until 1590, by the celebrated Sanctoria; nor was that valuable instrument reduced to a correct standard till 1724, by the skill of Fahrenheit. We havelon observations of temperature which go farther back than a century. Prior to that period we must glean our information from the loose and scanty notices which are scattered through the old chronicles, relative to the state of the harvest, the quality of the vintage, or the endurance of the frost and snow in winter. Great allowance, however, should be made for the spirit of exaggeration, and the love of the marvellous, which infect all those rude historical monuments.

In A. D. 401, the Black sea was entirely frozen over.

In 462, the Danube was frozen so that Theodemar marched over the ice to avenge his brother's death in Swabia.

In 545, the cold was so severe in winter that the birds allowed themselves to be caught by the hand.

In 763, not only the Black sea, but the Straits of the Dardanelles was frozen over. The snow in some places rose fifty feet high, and the ice was so heaped in the cities as to push down the walls.

In 800 the winter was intensely cold.

In 822, the great rivers of Europe, such as the Danube, the Elbe, and the Seine, were so hard frozen as to bear heavy wagons for a month.

In 860, the Adriatic was frozen.

In 874, the winter was very long and severe. The snow continued to fall from the beginning of November to the end of March, and encumbered the ground so much that the forests were inaccessible for the supply of fuel.

In 891, and again in 893, the vines were killed by the frost, and the cattle perished in their stalls.

In 991, the winter lasted very long with extreme severity. Every thing was frozen, the crops totally failed, and famine and pestilence closed the year.

In 1044, great quantities of snow lay on the ground; the vines and fruit trees were destroyed and famine ensued.

In 1067, the cold was so intense that most of the travellers in Germany were frozen to death on the road.

In 1124, the winter was uncommonly severe, and the snow lay very long.

In 1133, it was very cold in Italy; the Po was frozen from Cremona to the sea; the heaps of snow rendered the roads impassable; the wine casks burst in the cellars, and even trees split by the action of the frost with immense noise.

In 1179, the snow was 8 feet deep in Austria, and lay till Easter. The crops and vintage failed, and a great murrain consumed the cattle.

The winters of 1209 and 1210 were both of them very severe, insomuch that the cattle died for want of fodder.

In 1216, the Po froze 15 ells deep, and wine burst the casks.

In 1234, the Po was again frozen, and loaded wagons crossed the Adriatic to Venice. A pine forest was killed by the frost at Ravenna.

In 1236, the Danube was frozen, and remained long in that state.

In 1261, the frost was intense in Scotland, and the ground bound up. The Categut was frozen between Norway and Jutland.

In 1281, such quantities of snow fell in Austria as to bury the very houses.

In 1292 the Rhine was frozen over at Breysach, and bore loaded wagons. One sheet of ice extended between Norway and Jutland, so that travellers passed with ease; and in Germany, 600 persons were employed to clear away the snow, for the advance of the Austrian army.

In 1305 the rivers of Germany were frozen, and much distress was occasioned by the scarcity of provisions and forage.

In 1316 the crops wholly failed in Germany. Wheat, which some years before sold at *six pence* a quarter now rose to two pounds.

In 1323 the winter was so severe, that both horse and foot passengers travelled over the ice from Denmark to Lubec and Dantzic.

In 1339 the crops failed in Scotland, and such a famine ensued, that the poorer sort of people were reduced to feed on grass, and many of them perished miserably in the fields. Yet at this time wheat was so low in England as *three shillings and fourpence a quarter.*

In 1344 it was clear frost from November, to March, and all the rivers of Italy were frozen over.

In 1392 the vineyards and orchards were destroyed by frost, and the trees split to pieces.

The year 1408 had one of the coldest winters ever remembered. Not only the Danube was frozen over, but the sea between Gothland and Zealand, and between Norway and Denmark; so that the wolves, driven from their forests, came over the ice into Jutland. In France the vineyards and orchards were destroyed.

In 1423 both the North sea and the Baltic were frozen. Travellers passed from Lubec to Dantzic. In France the frost penetrated into the very cellars. Corn and wine failed and men and cattle perished for want of food.

The successive winters of 1432, 1433 and 1434 were uncommonly severe. It snowed *forty days* without interruption. All the rivers of Germany were frozen and the very birds took shelter in the town. The price of wheat rose in England to *twenty-seven* shillings a quarter, but was reduced to *five* shillings the following year.

In 1460 the Baltic was frozen and both horse and foot crossed over the ice from Denmark to Sweden. The Danube continued frozen two months, and the river yards in Germany were destroyed.

In 1468, the winter was so severe in Flanders, that the wine distributed to the soldiers was cut in pieces with hatchets.

In 1544 the same thing happened again—the wine being frozen into solid lumps.

In 1548 the winter was very cold and protracted. Between Denmark and Bostock, sledges drawn by oxen or horses, travelled on ice.

In 1564, and again in 1565, the winter was extremely severe all over Europe. The Scheldt froze so hard as to support loaded wagons for three months.

In 1571, the winter was severe and protracted. All the rivers in France were covered with hard and solid ice, and fruit trees, even in Languedoc were killed by the frost.

In 1594, the winter was so severe that the Rhine and Scheldt were frozen and even the sea at Venice.

The year 1608 was uncommonly cold, and snow lay of immense depth even at Padua. Wheat rose in the Windsor market from thirty six shillings, to fifty six shillings a quarter.

In my next article I will conclude the account of cold and frost, and commence that of heat and drought, and will then make some general observations as to the effect of frost, heat and moisture upon the earth's crusts or stratas. E. M.

TO THE SUBSCRIBERS TO THE FARMERS' REGISTER.

One more monthly number will complete the current (9th) volume of the Farmers' Register, immediately after which will be commenced our labors, expenditures, and performance of obligation to subscribers, for the next succeeding volume and year. The "Conditions of publication" for the ensuing volume will be inserted in this number; and we respectfully and earnestly request of every subscriber, whether old or new, punctual or delinquent in paying his dues, to read and mark the conditions, and the offers of different *premiums* thereto annexed.

It need not be said that we desire the continued favorable regard and support of those who have heretofore given their subscriptions to this publication, and who approve its course and its effects. All such will give an additional and important value to their continued subscriptions by sending early payments, thereby making themselves entitled to one or other of the different premiums offered for advanced or early payments. And though many such subscribers, as heretofore, may be content to forego the extra premium copy, and yet pay as if they had taken it, still we prefer that every one shall make use of this privilege who may have a right to require it. The extra copies are not sent without being ordered; because, if not wanted, by sending even a single number, a volume is destroyed, without benefit to any one.

Those subscribers who design or wish to discontinue receiving the Farmers' Register, are as earnestly requested to give the proper notice (*according to the conditions,*) as early as possible after this publication; and by no means to wait, as so many do, until our expenditure for their supply of the next volume has been fully incur-

red, or, still worse, until the limit of time for discontinuance has elapsed.

THE REMEDY OF EACH INDIVIDUAL AGAINST NON-PAYING BANKS.*

From the Bank Reformer.

Having perused your first number, and considering your object to be one of general interest, and highly praiseworthy, the writer readily contributes the result of his observation and experience for its promotion.

A continued suspension of the banks is an abuse only tolerated by a depraved public opinion. The circulation of the notes of suspended banks, *as money*, is an absurdity. It introduces a currency of fluctuating and indefinite value, or of no value at all, destructive of all credit, and highly demoralizing to the community which tolerates it. In fact its evils are universally admitted in theory. The great mistake is in so readily submitting to them in practice. The great error is in reference to the remedy. Every individual is made to believe that he alone can do nothing, that he has no alternative but submission, until the public provide the remedy.

Now the fact is directly the contrary. Every individual has the remedy in his own hands. That remedy is the refusal to receive broken promises in exchange for property, or in payment of contracts. This every man can do. And in the latter case eventual payment, in the legal currency of gold and silver, is secured to him by the constitution of the United States. It is true individuals are unwilling to defend their rights by law against a powerful public opinion, however false and mistaken that opinion may be. But in a case like the present, when a great public evil is the result of such acquiescence, it becomes an act of patriotism, an absolute duty, to enforce the laws against the abuses of the banks. This remedy, or I am much mistaken, still exists against the banks of Virginia. The legislature has most improperly relieved the banks from the *penalties* of suspension, but has no power, to secure them against eventual payment of their notes with interest. Let a number of patriotic individuals unite in the measure of bringing suits on every bank note, or in whatever way will make the suits most expensive in costs to the banks, and you will very soon see the resumption of every solvent bank. They will either pay or break. This is not mere speculation. The experiment has been tried in New England, with perfect success. In 1808, the country banks in New England had adopted various expedients to evade or delay the payment of their notes, in consequence of which they became depreciated to the extent of three or four per cent., and this very depreciation gave to them the entire circulation for common purposes, even in the city of Boston. Each bank justified itself as now by the practice of others. A number of individuals, viewing the matter in its true light as an abuse in banking which ought not to be tolerated, from the best motives united in the measure of bringing separate suits on every note presented for payment, relying on the coercion arising from multiplying the costs. As the laws of Massachusetts imposed no penalty at that time beyond the legal interest of six per cent. per annum, some reams of blank writs were prepared and notice given to the banks of the determination to resist their abuses. The success was complete. The first bank on which the experiment was tried gave up the contest after a few days' resistance. The others cried for quarter. The reformation was immediate and complete; but soon revealed the actual insolvency of many banks, which had found it easy to sustain their credit under the former system of non-payment. Experience has fully shown that there is no remedy for bank abuses like the coercion of the law. We recommend this specific to the patriotic Association of Petersburg. A bank which will not pay its notes after a suspension of four years, should be treated as the established enemy of sound credit and honest dealing, and driven from the community. The common error put forward in the school of Mr. Biddle, and widely circulated by the needy friends of a depreciated currency, is that one portion or community of the United States cannot maintain a sound currency whilst a neighboring community tolerates a depreciated one—that there can be no resumption unless it be general. Thus, the legislature of Virginia is made to believe that the banks of that state cannot resume specie payments, whilst Baltimore is in a state of suspension. So Maryland must wait for both Virginia and Pennsylvania; and as all can never agree upon the time, there will never be resumption. Now this idea is wholly false, the veriest of errors. Specie is wholly out of use in a community where a depreciated currency is generally adopted. It commands a premium for the purpose of being transmitted abroad or where it is properly appreciated. Its tendency is to leave the community where the banks are suspended, to go to that where the banks pay specie. The result is as uniformly true in practice as the theory is sound and reasonable.

Boston, and the country of which it is the commercial centre, found no difficulty in maintaining specie payments in 1815 and 1816. When the banks of every other portion of the United States suspended, the banks of New England were never more at ease. So, since April 1838, Boston and New York have maintained the integrity of a sound currency, without the slightest difficulty. When Philadelphia suspended, did her doing so make specie payments more difficult to maintain in New York? On the contrary, after the panic arising from a false public opinion was over, it was found that the current of specie was wholly *from* Philadelphia, where it had ceased to be in

---

* Were we permitted to give the name of the author, it would command respect and attention for this communication, even if its merit were not of itself conspicuous. We may however say thus far, that it is the production of one who is friendly to the banking system properly conducted, and to a currency principally of bank paper—and who, moreover, has learned by long practical acquaintance as much of banking and commercial business, as he has by study and reasoning of the theoretical truths and principles of political economy. We are proud of such a contributor to the Bank Reformer; and shall be gratified hereafter to present through its pages the views of so well-informed a *bank-man*, even should they come in conflict with our own opinions.—Ed. B. R.

demand, *toward* New York, where its value was appreciated in the currency. So in fact the banks of Virginia have nothing to fear, by resuming, whilst Baltimore remains suspended. The notes of the Virginia banks will at once bear a premium in Baltimore, for use in Virginia, equal to the depreciation of the Baltimore currency. But the banks of Baltimore will not be the purchasers, since by doing so, they are losers of the sum which they have to pay as premium. The town of Petersburg can maintain a sound currency if it will. Without the slightest difficulty, every individual may decide, that he will recognize no currency by receiving or paying it, but at its specie value—there lies the true remedy. EXPERIENCE.

Boston, October 15.

ROOT CULTURE IN FRANCE.

For the Farmers' Register.

Mr. Editor,—I send you an article on the culture of potatoes, turnips, carrots, and beets in France, translated from 'Le Bon Jardinier.'

Pomme de terre, or *Parmentiere*, *Solanum tuberosum—Irish potato.*—This valuable plant fortunately needs no recommendation in France; its merits are fully appreciated there, and if some parts of the kingdom are still behind-hand in the cultivation of it, that will not long be the case. Care for the future should be directed to the amelioration of which its culture is susceptible, care as to the different operations which it requires, care in the choice of varieties in relation to the difference of soils and climates. Want of space prevents my entering into details sufficiently for any of these objects; I shall therefore confine myself to a few detached remarks. The methods of cultivating the potato are various, and one can name none of them that are not advantageous when the work has been done with attention and assiduity. Whatever method one follows he should never forget that the oftener and better he works his potatoes the greater and larger will be their product. There is yet a difference of opinion as to the best method of manuring for them, but the prevailing custom seems to be to throw the compost into the furrows, and to place the potatoes immediately on it. In hard clay lands, where generally the quality of the potatoes is bad, one will find it better to use, instead of the compost, coarse litter, or even new straw, or the leaves of any dry plants which serve to raise and lighten the ground. We will give here an idea of the Irish method of cultivating the potato, which differs widely from ours, and which they say is more productive, and which has in addition the advantage of bringing good potatoes in land naturally too wet for this plant. They divide the land into beds more or less wide, but say five feet divided by an interval of two feet. This interval should not be planted, and will serve to furnish earth to lay on that which is planted. They work lightly with a hoe or spade the surface of the beds. They then spread the manure, on the surface of which they place the potatoes at regular distances of from nine to ten inches every way. They then cover them with from two to three inches of dirt taken from the aforementioned unplanted intervals. When the plants are some inches high they place about them another layer of earth, taken from the same places; this operation is to be repeated rather later a third time. It is unnecessary to say that the earth from the intervals should be well pulverized before it is spread on the beds.

As the question of giving preference to large tubercles or to small ones, to quarters or to eyes, cannot be discussed here, I will only permit myself to say that, from some comparative experiments, it seems that with an equal number and on equal ground the large tubercles will give the most considerable net product, and that the small tubercles or the bits of potato produce a greater quantity in proportion to the quantity of seed that is planted. Therefore one should prefer either the one mode or other as he finds it to his interest to manage to advantage his land or his seed. The eyes detached with a little of the pulp have been very much recommended. This is a supplementary means, very useful in years of scarcity, but in ordinary cases is not as desirable either as the whole tubercles or as the quarters. The germs already put out, detached from the tubercle which bears them, and planted, give very good results. To obtain them at the latest period it is well to plant some time in June slips taken from stalks that are sufficiently firm and developed. This mode is advantageous for replanting where they have failed to come up, and appears susceptible of very important applications, and deserves to be studied with attention and interest. The seed from the berry is another valuable mode of reproduction, which it is desirable that every one should know, that they may make use of it in case of need. It will give, in the first year, if the land is light and suitable, produce of good size. It is executed, in two manners, first by sowing them in a nursery in the garden, to replant at from fifteen to eighteen inches between each plant, or by sowing them in the following manner, viz: The earth being properly prepared, they make slight trenches at the distance of from eighteen inches to two feet apart. In March or April they sow it very thinly in these trenches, and cover it very lightly with earth well pulverized. When the young plants can be easily distinguished pull up the weeds with the hand; then when they are some inches high work them anew and thin them in the places where they are too thick, and with a hoe place some earth about the plants which remain, to strengthen them. Rather later a second thinning is necessary, which leaves the plants about one foot apart, this time they should be moderately hilled up. They then continue to hill them as they do planted potatoes. In an experimental sowing of an entire field, executed for the Society of Agriculture by M. Sageret and myself, we obtained in this manner potatoes of which the largest moiety were of the ordinary size and the rest were as large as nuts. But the principal and almost only design in sowing them is to obtain new varieties. Many varieties of potatoes differ very widely, some are very early and some very late; some are distinguished for their great yield, others for their excellent quality; some have but few stalks and leaves, giving free access to the rays of the sun, and in some species the leaves form a thick cover that effectually wards off the sun. These differences should have great influence on the choice of the kind to be cultivated

in different circumstances and soils. Thus the leafless varieties will be of a better quality, and will ripen better in a cold and moist soil, whilst those which keep off the sun from their roots will protect themselves better in a drought on a dry and scorching soil. The varieties whose tubercles tend to raise themselves to the surface should be hilled more, and consequently planted more distant, than the other kinds; the treatment of those whose tubercles naturally grow downwards should be proportionably opposite. One sees by this that the study of the varieties is far from being indifferent, and that to obtain in quantity and quality the best possible produce, it is necessary to combine local circumstances with the habits of the variety, and to modify the culture in consequence thereof. Among the numerous varieties which exist, I shall only mention some of the most valuable. *Le cornichon jaune*, called the yellow Holland in the Parisian markets, is very light and digestible. *La truffe d'août* is a pale red, early and very good. *La Descroizille* is of a rose color, pretty long, of an excellent quality, and keeps well. *The early dwarf* is yellow, round, and remarkable for its extreme precocity. It ripens in June. *The fine early* is a variety which has been lately brought from the United States, and is almost as forward as the preceding, but more mealy and of a better quality. *La Chave*, or *Shaw*, is yellow, oblong and more forward, larger and more productive than the *truffe d'août*. It is the most valuable of the early varieties that I know. The *late Irish*, called the *American* at Neufchatel, in Switzerland, and the *Swiss potato* at Valenciennes, is valuable because it can be kept until midsummer without sprouting. Many other varieties might be mentioned, particularly among the pale red and the large yellow. Many of this last variety have the merit of being at the same time productive and very good. The varieties of the potato are not absolute, but depend often on the climate and the soil, and it is proper that one should try many kinds before he determines which he shall cultivate. The seed can here be of great use in creating new varieties in different situations, more suited to the climate in which they are originated, than those brought from a distance.

I have received from M. Saline a wild potato, the type of all of our varieties, but its small and brown tubercles are inferior to our good species. I have mentioned this variety only on account of the interest which it offers in relation to natural history and to the history of this plant, so important in our rural economy. To the different varieties mentioned above I will here add the *Sainville*. It is a yellow, oblong potato, and was obtained from the seed by M. Sainville, a farmer of distinction, who had the kindness to communicate it to me, with many other good varieties obtained in the same manner. It is one of the best potatoes that I am conversant with, has a fine pulp, is dry, mealy, and has a fine flavor. This and the Descroizille are, I think, the only potatoes which can without too much exaggeration be compared to the chestnut. The first working to be given to the potatoes may be done very advantageously with a harrow, dragging it transversely on the rows some time after planting, when the shoots first begin to show themselves above the ground; they pass the harrow twice over the rows, this is a good and economical mode of working the potato.

Navet, turnip. Rabioule. Brasica Rapa.—The resources which the turnip furnishes as food for cattle through the winter are generally known. From time immemorial they have used this root in France for fattening beeves and to aid in the keeping of cows, sheep and hogs. Turnips like a soil rather light and dry; than stiff and moist, well prepared, clean and manured. The ordinary time for sowing them is from the first of July to the first of August, it however may in some cases be deferred as late as the first of September and in others may be much earlier. The usual mode of sowing them in France is to sow them broad-cast; that of sowing them in rows would be certainly preferable on account of the greater facility of weeding and working them, if the implements suitable for this work, such as the cultivator, the small triangular harrow, and other similar instruments, were more used among us. One can even after having sown them broad-cast trace the rows with these instruments at the first working. But, in whatever manner one sows them, it is always advantageous for the turnips, and for the crop that follows them, that they be thin and well worked. Although it is generally very advantageous to give the culture of turnips the care which I have indicated, yet I should add that they frequently get very good crops of this root with much less care, and in sowing them after a single light working given to the stubble fields the seed will thrive if the season is favorable. Although this is by no means the best mode, yet in countries where this culture is but little advanced it often renders good service to the farmers. It is particularly in the rye lands, light and sandy, that this manner of cultivating the turnip can be practised with success. All large varieties are suitable for the farmer; the one principally used is the large turnip of Limousin called the *Rabioule*. There are many varieties of the turnip. That of *Auvergne* with a red top is excellent, the *Norfolk* is still more renowned, but it is slow in coming to maturity, and for that reason does not suit for late sowing, and requires a careful culture to obtain its full developement; a third, originally from Holland, and noticed in my collection as the *Turnep hâtif*, is valuable on account of the facility of its success, the rapid advancement and the great size of its roots. It is much better suited than the other varieties to be sown late and under unfavorable circumstances. The *round yellow turnip* is also a very good variety; it grows less out of the ground than the *Rabioule*, and does not acquire such great size; its pulp is close and firm, and it can stand the frost rather better. A new variety, the *yellow Scotch turnip*, has lately spread a little in Scotland and England, because it is said to be better able than all others to stand the cold. Among the long turnips one of the most beautiful and best for the farmers is the long *navet de campagne*, from Alsace, sometimes known as the *large Berlin turnip*. The turnips should be dug up and put away before the cold weather, at least all that you do not wish to have eaten where they stand, by the sheep, which is in some instances very advisable. They sow generally six pounds of seed to the hectare.*

* A hectare is equal to two English acres.

Carotte. Daucus carota. The excellent quality of the carrot as forage for cattle is well known, and should render its culture in the fields more general than it is. One of its advantages is that it can make shift without manure. A soil soft, deep, well pulverized, and that has been manured during the previous year, suits it best. If one sees fit to manure for them it is best to use compost. They sow them at any time during March, April and May, and sometimes even in June, according to the climate and soil, at the rate of from 8 to 10 pounds per hectare, either broad-cast or in rows, which is best. They cover the seed with a light rake and a roller. Sometimes the carrot is sown with oats, barley, flax or some other spring grain, or even on the rye and wheat with a rake, the success is less certain thus than when sown alone. In the last case they thin them and work them. They cut off the leaves as they dig them up or afterwards, they then put them in a shelter to preserve them from the cold, or if the soil is dry they place them in deep trenches, or in a pit. Many kinds of carrots are cultivated for cattle. In England they prefer the red, in Flanders the pale red, with a large top, elsewhere the yellow or white. There is some difference in the varieties independent of the color, but all can be usefully employed. The *yellow of Achicourt* is justly regarded as one of the finest kinds, the *large white of Breteuil* is also a very fine and vigorous variety. Since 1825 I have had a variety which was sent me from Brussels and which seems to me very interesting to farmers; it is white with a green top, and grows considerably out of the ground, extremely large and remarkably vigorous.

Betterave champêtre. Desette. Beta vulgaris campestris.—All beets are excellent food for cattle, especially for milk cows, but they cultivate particularly for this purpose the *Betterave champêtre* on account of its great product. It requires a good soil well prepared, and that has been manured during the winter. They sow it from the last of March to first of May, often broad-cast, but the culture in rows is preferable at the distance of fifteen to eighteen inches, which is necessary to work the intervals with the hoe or the cultivator. They thin, weed and work the plants without hilling them. The beet is also sown in hot beds to be replanted in the fields when the roots have attained the size of the finger. At the end of summer, when they have nearly attained their maturity, one can gather the leaves taking those which are at the bottom and always leaving a good bunch at the top. In October and November, before the frosts, they dig up the roots, and after having taken off all of the leaves and wiped off the dirt, they put them in a dry place, or in a pit or trenches, in the ground, covered with coarse straw, to defend them from the cold and dampness. They can eat these roots during the whole winter. There are many varieties of the field beet, but of which the most esteemed and the most beautiful is that which grows more than half out of the ground, and is for that reason called *Betterave sur terre. La Betterave blanche pure*, generally used for making sugar, deserves also to be used as food for cattle. From the interesting experiments related in the Annals de Roville, by Mons. de Dombasle, it appears superior to the *Betterave champêtre* in the proportion of two to one in point of nutritious qualities. *La blanche a collet rose*, also cultivated as a variety for sugar, is perhaps still more valuable for cattle than the pure white, because it is more vigorous and larger. I will mention as being one of those used in making comparative experiments, the *Jaune blanche.* The skin is yellow and the pulp is white. It is rich in saccharine matter and at the same time strong and vigorous. When they sow the beet in rows they use six pounds of seed, and when broadcast from eight to ten pounds per hectare.

AMERICAN WONDERS.

Two of the greatest natural curiosities in the world are to be found within the United States, and yet scarcely known to the best informed of our geographers and naturalists. The one is a very beautiful waterfall, in Franklin county, in the state of Georgia; the other a stupendous precipice, in Pendleton district, South Carolina. The Tuccoa fall is much higher than the falls of Niagara; the column of water is propelled beautifully over a perpendicular rock, and, when the stream is full, it passes down the steep without being broken.

The Table mountain, in Pendleton district, in South Carolina, is an awful precipice of nine hundred feet. Very few persons, who have once cast a glimpse into the almost boundless abyss, can again exercise sufficient fortitude to approach the margin of the chasm; almost every one looking over, involuntarily falls to the ground senseless, nerveless, and helpless, and would inevitably be precipitated, and dashed to atoms, were it not for the measures of caution and security that have always been deemed indispensable to a safe indulgence to the curiosity of the visiter or spectator. Every one, on proceeding to the spot whence it is usual to gaze over the wonderful deep, has in his or her imagination a limitation, graduated by a reference to distances with which the eye has been familiar. But in a moment, eternity, as it were, is presented to the astonished senses; and the observer is instantly overwhelmed. He soon recovers from the first surprise, and in wild delirium surveys a scene which, for a time, he is unable to define by description or limitation. —*Philadelphia Inquirer.*

TRANSPLANTING TREES.

Most nut-bearing trees may be as much improved by transplanting and grafting as fruit trees are. The hickory and the chestnut may thus be made to bear nuts far better flavored and three times as large as they produce in an uncultivated state. In a good soil they will soon come to maturity; and, for shade, fuel, or timber, the chestnut, butternut, and hickory are not inferior to the unproductive horse-chestnut, elm, and maple. Late in autumn or in spring is the time for transplanting, for which and for grafting the same course is to be pursued as with the apple or pear tree, care being taken to place the roots about the same depth in the earth that they naturally grow.

SUMMARY OF NEWS.

Friday, Nov. 5, 1841.

A Spanish slaver, the Gabriel, from Havana, has been captured by the British cruiser Acorn, and sent into St. Helena. Seven other slavers had before been sent in, and 1600 Africans, taken in them, were then on the island. Papers found on the Gabriel stated that 23 slave vessels were fitting out at Havana.

The yellow fever has been very prevalent and fatal at Vicksburg and New Orleans. Natchez and Mobile have been very healthy through this season.

The ship Huntress arrived at New York on November 2, direct from Canton, bringing accounts 17 days later than those published in last week's summary, and which the papers by the Huntress confirm. There have been no later military operations.

The English traders in China are much dissatisfied with the terms of the ransom of Canton. They complain that the ransom will be paid out of their own money, and that the trade will fall into the hands of the Americans and other nations, to the injurious exclusion of the English. The English commander held possession of the island of Hong Kong, and had advertised many building lots for sale.

The blockade of Canton had been announced just before the Huntress sailed.

Florida.—The United States steamer Gen. Taylor, Capt. Gilham, arrived last evening from Florida. From a passenger we learn that Tigertail and most of his band, about 100 Indians, have been induced by Alligator to come in at Tampa—where they are safe under the *care* of Col. Worth. It will be recollected that Alligator is one of the Indians recently arrived in the territory from Arkansas, for the purpose of inducing his brethren to emigrate to that country.—*Savannah Republican.*

Shipment of two hundred and fifty Indians, including Coacoochee and his entire band!—We have informamation from Tampa Bay to the 14th inst. which may be relied on, stating that Colonel Worth had shipped 250 Indians to the West, including *Coacoochee* and his entire band, *Hospitarkee* and 85 of his band, and a considerable portion of *Halleck's* people; and that arrangements are in progress for extensive and energetic winter operations, to follow up the active summer campaign with which our present indefatigable commanding officer has "astonished the natives."—*St. Augustine News.*

In the case of the United States against the Bank of the United States, in the Circuit Court of the United States sitting at Philadelphia, in a suit to recover the sum of $251,243 24, retained by the bank out of the declared dividends upon stock owned by the United States, as an offset for commissions, losses, &c. in the negotiation of a draft of the Government upon France some years ago, the jury on Monday morning gave a verdict in favor of the United States for the amount claimed and costs.—*Nat. Int.*

In the important suit of the United States Bank against Steenbergen and his alleged endorser, (Col. Andrew Beirne,) judgment has been given for the defendants. The sum in suit was very large.

The packet ship Oneida sailed from New York on November 2d. for France, carrying away $151,830 in specie.

Benjamin Green, the famous Richmond financier, is now under trial.

Friday, Nov. 12, 1841.

Gen. Wingfield Scott has announced to the public, (through a *quasi private*, but *lithographed* circular letter,) together with an exposition of his political opinions and principles, his ready consent to accept the office of president of the United States. This annunciation purports to have been called forth by many private letters, none of which are given. It is now in all the newspapers. If indeed Major General Scott's ability to fill the exalted station were at all comparable to his ardor in seeking the promotion, it would be a dangerous and awful conjuncture, when the actual and acting commander in chief of the armies of the United States, is also in the field as an avowed, bold, and busy candidate for the presidency. But, as General Scott *is*, this remarkable and singular movement is rather an illustration of the old fable of the ass kicking at the dying lion. If the opinions of Gen. Scott are indeed worth any thing, (which we do not mean to assert,) this movement would clearly indicate the belief, that the lion Clay is politically dying—and that his claims to the succession no longer require respect or forbearance from the smaller aspirants of his own party.

"One of the greatest frauds practised upon the community by banking institutions, is the declaration of dividends by those that are suspended. The following dividends have been declared by the Philadelphia banks :—

	Capital.	*Rates.*	*Am't.*
Southwark	250,000	3 per ct.	7,500
Commercial,	1,000,000	3 "	30,000
Manuf. & Mechan.	401,300	2½ "	10,032
Western,	500,000	3 "	15,000
Northern Liberties,	350,000	2½ "	9,250
Moyamensing,	250,000	2½ "	6,250
Mechanics',	1,400,000	2½ "	35,000
Farm. and Mechan.	1,250,000	2½ "	31,250
Girard,	5,000,000	1 "	50,000
	$10,401,300		$194,282

The currency issued by these banks is at 4 per cent. discount for specie, owing to their confessed inability to pay their debts, yet in the face of this declaration, they come out and announce that they have made profit of an average of nearly 2 per cent. in six months, which they divide among their stockholders. Now, one of two things is certain. If the banks are making money, they can afford to bear the loss of converting a sufficient quantity of their assets into active means, in order to redeem their circulating notes. If they are not making money, and cannot pay their debts, this process of dividing up the capital among the stockholders is a direct robbery of the creditors of the bank. An association of individuals subscribe, as in the case of the Girard Bank, $5,000,000; on the credit of that capital they obtain credit of the public and of other banks; in process of time, they find themselves unable to pay the debts so contracted, and their notes sell in the market at 4 per cent. discount. They then proceed to divide up among themselves, at the rate of 6 per cent. per annum, the capital, on the strength of which they obtained credit. If they can divide 6 per cent., why may not they divide the whole, and leave the creditors to take care of themselves? The above banks are all insolvent, and the Girard so notoriously bad, that the stock sells at 25, and yet the directors have the boldness to take $50,000 of the money that belongs to the creditors of the bank, and divide it among the proprietors. The profligacy of this proceeding can only be equalled by the supineness of the people that permit such a state of things, or the corruption of the legislature that permits such institutions to exist.—*N. Y. Herald Money Article.*

A British sloop of war, Iris, has attacked a large slaver, in the Bight of Benin, and was beaten off with loss.

The bank of Buffalo has finally stopped payment. Of twelve banks in Buffalo a year ago, eleven are

broken, or at least have stopped operations, and the twelth is in bad credit.

Lima, July 9th, 1841.—Between the 8th and 15th ultimo, a complete transformation took place throughout Bolivia. Gen. Santa Cruz has been proclaimed president by the people and army, and a deputation has been sent to Guayaquil (where he at present resides) to invite him to return to his native country and accept the command.

A war between Equador and Peru now appears inevitable, in which it is probable that Bolivia, with Gen. Santa Cruz at her head, will take a part, and Peru will be invaded from the south and north simultaneously, when I conceive the fall of the odious Gamarra horde to be inevitable.—*Jour. Com.*

The Washington Bank of this city (one of the Free Banks) has been closed by an injunction from the Chancellor. Its circulation is small. In March last, it was $14,025; to redeem which, there were pledged with the Comptroller New York State Fives to the amount of $7000 and bonds and mortgages to the amount of $10,000. It has never enjoyed a large share of the public confidence.—*Ib.*

The London packet ship Philadelphia takes $55,000 in specie, chiefly sovereigns.—*Ib.*

There are indications in various quarters showing that a general movement is in contemplation to urge a resumption of specie payments by the banks. The dominant party in this state will probably think themselves bound to make a stir in the matter, and we do not think that the whigs will offer any obstruction to the course which the other may choose to pursue.—*Balt. Am.* (*Bankite.*)

Oct. 14.—*Our banks*,—We have previously noticed the fact, that the Mechanics' Bank, and the Bank of Augusta, were paying out their bills freely to pay for our staple. We have now the pleasure of announcing to our country friends, that all our banks have come to a similar determination, and the planters may therefore confidently calculate on receiving a specie paying currency for their crops.—*Aug. Sentinel.* [This result is entirely owing to the application of the "Macon specific," or to refusing to receive any depreciated bank notes, except at their real value. We trust the same will be applied soon in Virginia, if the legislature and the banks should maintain longer the existing fraudulent state of suspension and depreciation. In that case, "war to the knife" against the banks should be the rule of action of every foe to the fraudulent paper system.]

Gen. Santa Ana has become the master of Mexico, in the recent revolution.

It is understood that the leaders of the Houston party of Texas, now in power, are favorable to union with this country—and that the measure will be moved in the next session of the Texan congress.

J. B. Terry, the teller who robbed the Farmer's Bank at Danville, has been tried and acquitted without difficulty. We have not heard the grounds of acquittal; but as the proof was positive of his abstracting certain bank notes, we can only infer that the jury must have decided that paper *promises to pay* are *not money*—and that when these promises are notoriously broken, and not intended to be fulfilled, that they are *worth nothing*, and *are nothing* more than lies and evidences of fraud, sanctioned by the legislature of Virginia.

A question for lawyers. The banks of Virginia have forfeited their charters more than once by refusing to pay specie. Are any debts incurred to them as corporations, while thus unchartered, recoverable by law?

The steam ship Great Western arrived at New York on the 10th, bringing accounts from Bristol to October 23. The Britannia, which started on the 21st., also arrived at Boston on the 7th.

There has been an insurrection in Spain.

France is in a disturbed state.

There is great excitement in the money markets, both of London and Paris. The state of trade is bad. The heavy rains have injured the crops, and there will be a scarcity of wheat. There is a slight increase in the revenue. Cotton is steady.

All the English papers are talking about the probability of a war, and active preparations are making for it.—*Public Ledger.*

Philadelphia Money—There has been a great change for the worse within two or three days, in the discount on Philadelphia money, and in fact in all the money of Pennsylvania and that part of New Jersey which remains suspended. The discount yesterday was 5 1-2 to 6 per cent., and the brokers were quite indisposed to buy large sums at all. Suspension seems to be coming to a crisis. The sooner the better. Pay, or wind up, ought to be the only language held towards the banks throughout the country.—*Jour. Com.*

The rate of exchange is increasing against Virginia, that is, the notes of our non-specie-paying banks are becoming still more depreciated—and that not only as to the specie currency of New York, but also as to the irredeemable paper currency of Maryland and Pennsylvania. The Virginia banks have stopped their heretofore regular practice of *selling specie*—that is, selling drafts on New York, which is the same thing in effect.

"The movement in Philadelphia on the part of the strong banks in favor of resumption, will no doubt be successful, notwithstanding that dishonest prints, both in this and that city, endeavor to discourage the measure." "The Philadelphia Banks have now been suspended over two years, and exchange, that is the depreciation of their currency, is as high now as it was in November, 1839. Will the sapient Courier inform the public when, at this rate of improvement, *exchange* will be at par?"—*N. Y. Herald*

[This question will apply as well to the banks of Virginia as to those of Philadelphia.

On Sunday night, about midnight, fire broke out in a stable in Petersburg and consumed the First Presbyterian Church, Powell's Hotel, and several stables and smaller buildings. About 30 horses perished. The loss about $60,000. The remote origin of the fire supposed to be the drunkenness of a negro, and the existence of numerous low tippling shops being permitted. The certain cause of the progress of the conflagration, is the refusal of the town to supply water, which might be done for one fifth of the cost of this one fire—and for want of which easy supply the town is always in danger from fire.

The yellow fever has ceased at New Orleans. To the last accounts, it was still raging at Vicksburg.

A light-house has been constructed entirely of iron, in England, to be carried (in pieces) and set up at Moran Point, Jamaica.

The Seminoles are continuing to come in and surrender in small parties, and the total cessation of the war seems to be at last at hand.

Specie to the amount of $150,000 was shipped on the 9th inst. from New York, by the Patrick Henry, for Liverpool.

Friday, Nov. 19, 1841.

There is an increasing uneasiness in regard to the bills of the western banks of New York. It is supposed that many others will follow the Bank of Buffalo into liquidation.

The shocking state of affairs evinced by the report of the Girard Bank has astonished even the foes of that concern, and has much increased the anxiety in relation to the other banks, [of Philadelphia,] many of which will undoubtedly soon make assignments, no

other course seems to be left to them. Their funds are completely locked up in unavailable and constantly depreciated assets. The banks of Baltimore seem to be bound hand and foot between the wants of the state, city, and that stupendous shinplaster concern, the Baltimore and Ohio Rail-road, and the financiers of that city have been contriving a plan for some time, by which the Rail-road orders, payable only in city stock, which is at 15 per cent. discount, may be made worth par. The order for a property to be worth more than the property itself. So ridiculous a proposition would be a subject of amusement, were it not for the intense suffering that the people endure under such management.

The shipments of specie continue from this port, although there can be little gained by it as the operations are conducted. The cause of the shipment is however owing, in a great measure, to the continued suspension south, which has a great influence upon the bills drawn for the coming year.

The cotton market at the south is about becoming brisk, and yet there are no signs of resumption on the part of the New Orleans banks. There has been some talk of resumption in different sections, as usual, at this season of the year, in order to induce the dealers and manufacturers of the north to extend their usual credit, in the hope that the currency of the south will become better. We doubt, however, if any of the suspension banks have really entertained the idea of resumption. In Philadelphia, the banks that accepted of the revenue law of last winter, have an immunity for four years to come, and nothing but strong expressions of public opinion can induce them to be honest. Their suspension is made the cloak for the continued dishonesty of the southern banks. The trade of the south, as conducted by the intervention of the banks, is the main cause of the violent fluctuation of financial affairs.—*Money Article, New York Herald.*

The suspended debt of the New Orleans banks is now $8,000,000. It has been accumulated mostly by the course of business above described, and represents the actual and irretrievable losses on cotton. The bankrupt law will extinguish the most of it, and the only way that the institutions can save the remainder of their capitals is by a prompt resumption.—*Ib.*

The state of the southern currency is becoming every day a matter of more serious moment to the people of the United States. The institutions chartered by state legislatures, with the privilege of issuing a paper currency, that has usurped and driven out the constitutional currency, have been, by most of the states, absolved from paying their debts, and, emboldened by success, they seem each day to increase in audacity. The Banks of Virginia are an instance of this absurd and blind disregard of the rights of individuals and the sanctity of contracts. It is well known that the bills of all the banks of the union come to this market, to a greater or less extent, in the discharge of debts due here. These bills are for the most part purchased by those who make that a business, and are sent back for redemption. The price at which they are bought and sold depends, like that of every thing else, upon supply and demand. The supply depends entirely upon the movements of the banks themselves, and the demand during suspensions upon those who have indebtedness falling due to the banks, or those who wish to invest in southern produce. When the banks are paying specie, the matter regulates itself, because the bills, on being sent back to the bank, may be drawn in specie. These bills constitute a debt against the banks of the different sections, being transferred from the merchants to the banks. The banks, then, having assumed the debts of the dealers, refuse to pay. Their bills consequently fall to a discount, in this market, according to the credit of the bank. The Virginia bills were for a long time stationary at four per cent. discount; within a short time, they have fallen to 6½, a loss of 2½ per cent. on all the funds held by the purchasers here. This is a ruinous loss in a business where ⅛ to ¼ is called a good profit. Holders, in many cases, being unwilling to submit to this loss, have directed their correspondents to sue out the claims for payment in specie. To counteract this, the banks of Virginia have boldly threatened with proscription any person there who should assist this movement. High-handed as this measure is, it will not avail them, as we are aware that steps have been taken to compel payment in specie of large sums held. This is the only way in which the dishonest banks can be brought to terms. When they are threatened, or the public mind becomes excited on the subject, they state that they are "preparing to resume," and will *soon do so.* In this way they manage to stave off suits.—*Ib.*

$100,000 more in specie has been recently sent by the bank of Chilicothe to New York. That is, this bank which refuses to pay specie for its notes, continues to *sell* its stock of specie for the profit of 10 or 15 per cent. which its notes are depreciated.

On November 10th.—The Argo, for Havre, carried out, from New York, $129,000 in specie. The Switzerland, for England, took $80,000 in specie, on the 12th.

November 13th.—The depreciation at New York of Virginia bank notes, (by the prices current,) was 6 to 7 per cent. while those of North Carolina, also non-specie-paying, were at 4 to 4½ only.

The National Gazette says—"We learn that suits have been instituted by one of our citizens against a number of the individuals who were members of the Board of Directors of the Bank of the United States in 1839. The last dividend declared by the bank was in that year. The suits are understood to be instituted for the purpose of recovering a claim against the bank under a provision of its charter, which is as follows:

"If the directors of the bank shall make any dividends which shall impair the capital stock of said bank, the directors consenting thereto shall be liable in their individual capacities to such corporation for the amount of the stock so divided; and each director present when such dividend shall be made, shall be adjudged to be consenting thereto, unless he forthwith enter his protest on the minutes of the board, and give public notice to the stockholders of the declaring of such dividend."

[If there be not the like provision in all bank charters, there ought to be, as it is the only rule for honest procedure. If the directors of the Bank of Virginia were subjected to it, would they not have to pay (if they could) the amount of the last declared dividend? We earnestly hope that the directors of the United States Bank may be made to feel the full force of this provision of the charter.—Ed. F. R.]

Bank directors, look out!—"An indictment for a high misdemeanor has been brought by the grand jury of the superior court against the president of the Western Bank of Georgia, for the refusal of the bank to pay specie. There is a provision of the charter of that bank, which declares that the bank shall not at any time refuse to pay specie, and that upon such refusal the charter shall be forfeited. There is also a section of the penal code, which provides, that if any bank officer shall violate any provision of the charter he shall be indicted for a high misdemeanor."—*Pub. Ledger.*

Friday, November 26, 1841.

The steam ship Caledonia arrived at Boston on the 18th from Liverpool in 14 days, bringing accounts 12 days later.

A great fire occurred on the night of the 30th ult. in the Tower of London—from historical associations,

the most venerable and the most architectural monument in England. The jewels of the crown were placed in imminent jeopardy by the catastrophe, and the fire was with great difficulty prevented extending to the arsenal. The armory, which was consumed, contained about 300,000 muskets, and the loss, with the cost of rebuilding that part of the structure, will exceed £400,000.

A stupendous fraud has been discovered in the issue of exchequer bills, which appears to have been continued for several years, and so far as had appeared amounted to about £350,000. The cotton market remained without any material alteration. There is no later news from China. The Lords of the Treasury have authorized the admission of the rough rice from the United States at 1d. per quarter. It is said that the Irish peasantry will this year be exposed to the terrible calamity of a failure of the potato crop. It is also known that the wheat and oat crops are one third below the average, and the price of meat is rising on account of a distemper among the cattle. The abortive attempt in Spain had been completely crushed. A conspiracy had been detected at Brussels, and a quantity of arms and ammunition seized. The ultimate object of the conspirators was variously reported—some alleging that it was a republic, others a restoration of the Dutch dynasty.—*Public Ledger*.

All the banks of Buffalo, except a "red dog" one, have exploded, and a general suspension is anticipated in the Western New York Banking system. The currency of Western New York has been ruined by the mismanagement of the present state government. In the old "infected district" both the state banking systems, (the "safety fund" and the "free banking") have now exploded and become mere wrecks. Throughout the last summer and autumn, up to the day they blew up, these banks had been sustained by the state government, merely for political purposes—and they are now permitted to fall to pieces and to cheat the hard working community, solely to embarrass the next legislature. From the time of Rathbun, who is now expiating his forgeries in Auburn State Prison, up to the present day, the banking, political and commercial system of Western New York has been terribly demoralizing. We see its results in such spectacles as Rathbun in Auburn, Mitchell in the court of sessions, and a general suspension of all the Buffalo banks, and the probable downfal of many now standing up like drunken men, in that region.—*N. Y. Her.*

Gen. Santa Ana is now undisputed master of Mexico. Having put down all opposition by military force, he was elected president of the *republic* of Mexico by a junta of his own appointment. This is a very convenient and quiet mode of election, and well suited for such a republic as Mexico.

The authorities of the New Orleans banks have had a formal meeting, and resolved that it was expedient to resume specie payments *a year hence!!!* They might as well have fixed upon the day of judgment, which will be full as early as these or any other banks will *voluntarily* resume payment. But though we have no faith in any *voluntary* resumption by the banks, or even of their being ever compelled thereto by the legislative power alone, in Virginia or elsewhere, yet there are numerous and strong indications of resumption being speedily compelled by the popular will, acting authoritatively on the government and *legally* on the banks, to force a return to resumption of payments. The question of early resumption is now, and for the first time, fully before the public, every where, and especially in Virginia. The bankite newspapers, are clamoring for continued suspension—and even some others that claim to be for resumption, are for postponing it for nearly another year more. But whatever the banks and the legislative power may choose, they *cannot* much longer maintain the reign of dishonesty in an irredeemable and depreciated paper currency, after its being borne for nearly five years. We love especially to copy truths on this subject from bankite newspapers, when such rare opportunities occur. The last mail brings something in this way from our friends the editors of the Richmond Compiler and the Augusta Chronicle. The former say—"There has been such a continuation of abuse of banking, of erroneous legislation with regard to it, and such a succession of disappointments of just expectations, that we may well wonder that the condition of things is not worse than it is. Nothing but the indomitable spirit and recuperative energies of our country could have sustained it so well under such trying events." And the latter say—"Our observation of Georgia legislation on the subject of banks and currency, has satisfied us long since, that in the main, the currency is better when the Legislature has least to do with it, for the body is composed, generally of such a mass of ignorance and stupidity, on all subjects connected with banking and currency, that a majority of them have not sufficient capacity to profit by the plainest lessons of experience." Now we heartily concur in these opinions, and to the application of each one to both the legislatures referred to. And when it is considered that almost every thing done by both legislatures in regard to banks, and especially for the last five years, has been to sustain and pamper them with exclusive privileges, and to indulge their offences and pardon their iniquities, failures and frauds on the community—and that almost nothing has yet been done to restrain their evils or to punish their misdeeds, the legislators and banks could scarcely be more strongly condemned than in the above quoted words of bankite editors.

"There was some hope that the legislature of Virginia would have compelled a resumption within the limits of that state, but the example of New Orleans will now be made the pretext for continuing to shave the public with depreciated paper, under the pretence of calling it exchange. The banks will now without scruple ship their specie to New York, and buy up their own paper at as high rates of discount as possible. This can be done in two ways; one is to keep an agent here for the purpose of using the funds of the banks maturing in this city for the direct purchase of the money, as it is offered in Wall street by those who bring it or receive it as a remittance from the South. The other is, instead of paying the bills in specie, when presented at their counters, they ship their specie to the agent here and sell bills drawn against it at ten to fifteen per cent. premium, which is in fact buying their own bills at their own counters at 15 per cent. discount. Intelligent men are found who submit to this robbery, and innocently complain of the "high rate of exchange." The bank officer laughs in his sleeve, and condoles with him on the "hard times," and joins him in cursing "Captain Tyler for vetoing the bank," and sometimes persuades him that the high rate of exchange is because the New York banks "won't suspend." The man pays his 15 per cent. shave, and goes off, satisfied that nothing but universal bankruptcy can restore the currency. So credulous are the southern people. Year after year they permit themselves to be plundered on the shallowest pretences. The banks send their specie to New York. It accumulates here and goes to Europe. The banks then say they cannot resume, because the specie is leaving them."—*N. Y. Her.*

Pork.—The American publishes this morning a letter from Kanawha, (Va.) which says that there are about 20 or 25,000 hogs on the road leading from Owensville, Kentucky, to Charlestown, Kanawha; and about 8 or 10,000 on the road from Point Pleasant to that place. Some 5 or 6,000 have passed through that village to the eastern markets. Price in Charlestown,

$3,00 per hundred, cash. The number of hogs brought this fall to Virginia, will, it is supposed, be larger than in any year for the last four or five.

The Pittsburgh Daily American of the 8th. instant, says, "we are told upon good authority, that pork can now be contracted for, in the interior of Indiana, for $1,50 per 100 pounds."

Specie on the move.—The Chilicothe (Ohio) Advertiser states that the bank of Chilicothe, last week, shipped between sixty and one hundred thousand dollars in specie to New York.

Large sums have also lately been drawn from St. Louis, (Missouri.) These shipments, from points so remote, indicate the imperious character of the foreign demand for coin, and are equally demonstrative of the ruinous nature of the trade in which the country is engaged.—*Baltimore Patriot, (Bankite.)*

The specie still leaving the country. The ship Switzerland from New York took out $80,000 in specie for England. On the 15th inst. $30,000 went by the Sheffield. The Great Western, detained for the 23d, had engaged (on the 17th) nearly $500,000 mostly in gold. The Boston carried out $100,000; The Francis the First took $109,000 for Havre; making for one week, $739,000 shipped to Europe. The New York Herald adds,—"The Bank of Chilicothe, Ohio, has recently sent about $150,000 [specie] to this city, for the purpose of drawing against at 10 per cent. premium for its own bills. It is in this way that specie is driven from the interior, to this city, by the presence of irredeemable paper, and from this city flows off to Europe."—*Money Art. N. Y. H.*

The Union Bank of Mississippi has assigned its effects for the benefit of its creditors. Messrs. James Elliot, Charles Scott and C. W. Clifton are the Assignees, and are the President, the Cashier, and the Attorney of the institution! The salaries voted them are $4000 per annum each. The movement is said to be a collusion between the officers and a few of the directors, and the object to plunder the bank of its valuable assets. Much exasperation is evinced relative to the matter.—*Ph. Ledg.*

In addition to Maryland and Georgia, the more recent elections of Pennsylvania, Ohio, New York and Michigan have gone by large majorities in favor of the loco-foco party, (we know not by what other name to designate it, in the present strange condition of parties.) These results are a sure indication of the triumphant majorities being opposed to the re-establishment of the United States Bank. *Perhaps*, also, they may be taken as evidence of as general a feeling adverse to the whole fraudulent banking system. *But this we still fear to believe*, and can not trust *any existing party* for that extent of honesty.

The last elections, those of Mississippi, go still further. The issue was made upon the policy of paying or not paying the state bonds, or public debt, and the anti-bond men are triumphant. It is a deplorable thing that any people or government, however cheated and abused in the manner of forming the debts, (as Mississippi undoubtedly was cheated,) should deny their obligation. But it is one of the legitimate results of the fraudulent paper credit system, in its worst operation; and this refusal of Mississippi to pay her debts will be followed by other of the most debt-burdened and bank cheated states. Pennsylvania and Florida will follow the example—and probably Illinois, Michigan and Indiana, if not more. The public credit of all the states will be deeply affected.

At a large political meeting in New Orleans, on November 13th, the following resolution was passed unanimously—"Resolved, that we consider the suspension of specie payments by the banks of this state as having commenced in perfidy, and as being continued in fraud; that the late determination on the part of the banks not to resume until the first of November 1842, is considered by this meeting as a violation of common honesty, equally injurious to the moral character and commercial interest of our city."—*Charleston Mercury.*

Benjamin Green, the great Richmond financier was acquitted upon his last trial. He was remanded to jail, to be tried upon the more than twenty still remaining indictments. No doubt he will be cleared on all; but at the same rate of progress, he will be forty years under trial. We would advise the losers of the half million (the stock-holders of the Virginia Bank) to drop Green and Dabney, and to sue the then directors of the bank, who could scarcely escape paying the legal penalty of *double* each suiter's loss by the defalcation. See the general banking law.

As the furnishing a "Summary of News" was commenced with and principally for the issue of the *weekly* form of the Farmers' Register, so the two will cease together with this number.

CONTENTS OF THE FARMERS' REGISTER, NO. XI. VOL. IX.

ORIGINAL COMMUNICATIONS.

	Page
Melilot again	629
Address to the Agricultural Society of Cumberland	639
Growing potatoes under straw	644
Aristida oligantha—poverty grass—hen's nest grass	644
Ground of preference for different kinds of wheat. Surface manuring	644
Green-sand of James river	645
To the subscribers to the Farmers' Register	663
Root culture in France	665

SELECTIONS.

	Page
Of pruning	625
Sweet potatoes	629
Prairies of Arkansas	632
Malaria	633
Extracts from Gen. Emory's Address before the Maryland State Agricultural Society	634
Essay on the importance of lime in soils—No. 1	636
Important discovery in agriculture	643
Agricultural and Horticultural Society of Henrico	646
European farming	652
Subsoil plough	652
Fruit trees	653
Proper articles for exhibition at agricultural shows	653
The Missourium, or leviathan skeleton	654
Hiving bees	656
Medium sized vs. large hogs	657
Horn-ail	658
A day at Ridgemont	658
On peat	660
Dr. Boucherie's process	661
On cider making	661
The remedy of each individual against non-paying banks	664
American wonders	667
Transplanting trees	667